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Association of Indian Universities

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SCHEME OF AUTONOMOUS COLLEGES

The UGC invites proposals for consideration under the scheme of Autonomous Colleges from the Colleges which have been recognized under Section 2(f) & 12 (b) of UGC Act 1956. The Scheme envisaged to improve the quality of Under Graduate Education and to delink most of the Colleges from the affiliating structure. It is proposed to increase the number of autonomous colleges to spread the culture of Autonomous and the target is to make 10% of the eligible colleges autonomous by the end of 10th Plan.

The detailed guidelines is available on the UGC website i.e. www.ugc.ac.in. The application forms may be obtained from the respective Universities and from the UGC office, Room No.406, Bahadurshah Zafar Marg, New Delhi-110 002. It is also available at UGC Regional Offices located at Bhopal, Bangalore, Hyderabad, Kolkata, Guwahati and Pune.

The proposal in the prescribed format and complete in all respect should reach Dr.(Mrs.) Renu Batra, Joint Secretary, UGC, (Room No. 220/406), Bahadurshah Zafar Marg, New Delhi-110 002 on or before **31st October, 2003.**

Colleges whose proposals are pending with the UGC for want of No objection certificate from the State Government and / or university may only inform UGC about their interest to get their proposals considered as per *X plan guidelines latest by 31st October, 2003.*

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South Gujarat University, Surat: A Profile

The South Gujarat University, Surat is hosting the AIU West Zone Vice Chancellors' Conference on 16th and 17th October, 2003.

The South Gujarat University, Surat came into existence on 23rd May, 1968 under the South Gujarat University Act, 1965. It started functioning from August 1966 and conducted examination for the first time, in March-April 1967. Initially there were 21 Affiliated Colleges with more than twelve thousand students. The postgraduate departments were instituted in May-June, 1970. Today, there are 66 Affiliated Colleges, 73 Postgraduate Centres run in 32 colleges, and the 76 self-financing institutions. Besides, there are three recognized institutions and two approved institutions under the jurisdiction of the university. It serves the needs of nearly one lakh students seeking higher education.

The vision of the founding father of the university is enshrined in the university motto and emblem, i.e., *Satyam, Gnyanam, Anantam*. The motto is symbolized in the emblem—the sun for Truth and Knowledge and the circle for the Supreme Bliss, meaning that "by the pursuit of Truth and Knowledge. one can attain the Supreme Bliss".

Special Features

Although the history of the University runs over 35 years only, it has by now made its place on the national and international map. Its jurisdiction is characterized by a unique mix of growing industrial urban frontiers and tribal heritage. The University serves the entire South Gujarat region that comprises of Surat, Navsari, Valsad, Dangs, Bharuch and Narmada districts. This region has a population of about one crore of which more than 57% belong to rural and tribal hinterland. About 52% of the total population belong to the Scheduled Tribes. The University has opened up opportunities for the spread of higher education among the Scheduled Tribes and other weaker sections with a view to provide for their integration with the mainstream of the nation.

The unprecedented growth of trade and industry in the region warrants generation of experts and skilled personnel who can serve their needs with efficiency and commitment. The University interacts with these organizations with a concern for mutual benefits. Thus, it has established strong ties with the Southern Gujarat Chamber of Commerce and Industries and some other business houses.

In fact, since the inception of the University, special care was taken to institute non-conventional teaching programmes representing the emerging frontiers of knowledge. Thus, the South Gujarat University had the honor of pioneering the establishment of the departments of Business and Industrial Management. Rural Studies and Public Administration. The trend is further strengthened by the institution of the departments of Biosciences, Aqatic Biology and Computer Science. The University also offers courses that lead to postgraduate degree(s) in MLW, MHRD, Master of Bussiness Economics and Postgraduate Diploma in Mass Communication and Journalism and also in instrumentation. At present, the university offers postgraduate degrees in eight faculties, i.e., the Faculty of Arts, Science. Commerce. Education, Rural Studies, Engineering and Medical.

Some Significant Events

Within the span of 35 years of its existence, the University has passed through several ups and downs on account of paucity of funds and unforeseen disturbances caused by forces beyond its control. These forces include man-made calamities, such as riots and periodic protest movements and the natural calamities like floods, outburst of plague, earthquake, etc. Nevertheless, the university has trodden the difficult path by converting all such crises into opportunities. Thus, by now, the University has made ample use of the funds received from UGC since the Third Five-year Plan for developmental purposes. The grants received from the State Government and the donations from philanthropic individuals, business houses and industrial organizations have enabled the University to consolidate its infrastructure facilities, accelerating the process of reaching new heights in the field of academic and scholarly activities befitting the functions of the University. A few of these achievements include:

- A well qualified/faculty of 99 teachers, drawn from different parts of the country representing a national character. A sizable number of women Faculty Members offers a strong sign of gender equality.
- Visits of eminent teachers and researchers almost on a regular basis under the UGC scheme of exchange of teachers.
- Total adoption of the new curriculum since 2002-03 as per the UGC guidelines. Enrichment of library and information services from a modest beginning of only 23 books in the year 1966 to more than 150,000 books, 13,000 back-volumes of bound periodicals and encyclopediae 500 theses and 4200 dissertations till date. The University subscribes to more than 200 Journals.
- Introduction of new professional courses such as five-year integrated programme in Information and Technology, Mass Communication and Journalism, Foreign Languages and Instrumentation.
- There has been significant improvements in the laboratories in the Science departments. Excellent Computer facilities have been provided to those Departments, including those of Economics, Human Resources Development, Business Management, Physics, Chemistry, English and Public Administration.
- A well built indoor stadium for indoor games and sports. The University had the privilege of the presence of Dr A P J Abdul Kalam, the President of India for delivering the Convocation Address of the University during 2002-03. His Excellency Shri Sunder Singh Bhandari, the then Governor of Gujarat and the Chancellor of the University, was also present at the occasion.

Recently, His Excellency Shri Kailashpati Mishra, the Governor of Gujarat, inaugurated *Samaj Vigyan* Bhavan, constructed with the financial assistance received from UGC under the Ninth Five-year Plan.

With a view to bring about a sense of awareness among the masses against the increasing challenges of terrorism, the University organized a Seminar on the theme on the 11th September, 2003. The Seminar was addressed by the Honorable Jain Acharya Shri Mahapragnaji, Shri Sudarshanji and Honorable Union Cabinet Minister for Rural Development, Shri Kashiram Rana. An audience of more than 6000 persons took the benefit of the Seminar.

Zonal Conference of the Vice Chancellors

The university is hosting the Conference of Vice Chancellors of 72 Universities of the West Zone comprising of the states of Goa, Maharashtra, Gujarat, Rajasthan and Madhya Pradesh on 16th and 17th October, 2003. A similar Conference was organised by the University in the year 1995.

Future Development Plans

The future development plans of the University are aimed at promoting its teaching, research and extension programmes in such a way that it can better serve the regional and national needs, especially in the field of Industry, Science and Technology and Human Resources Development. It also aims at concentrating its teaching and research programmes with special thrust on the issues involved in the protection of environment and conservation of tribal heritage. During the Tenth Five-year Plan the University has put special emphasis on consolidation of teaching and research in Environmental Science, Biotechnology and Industrial Chemistry. In order to serve this purpose, the university proposes to consolidate the new courses through constant revision and updating of the library and other infrastructural facilities on its campus. The University plans to sign MoUs with some industrial organizations and philanthropic agencies to facilitate its efforts in these directions. One such MoU has already been negotiated with the Surat Municipal Corporation, Surat.

The University gives equal weightage to the development of co-curricular and extra-curricular activities. A proposal for equipping the existing indoor stadium with a hall is already in the pipeline. Similarly, a multi-purpose, well equipped auditorium is planned for organizing academic gatherings, i.e., Seminars, Symposia, Conferences as well as occasional cultural events.

Similarly, a commercial complex for ensuring the services of Banking, Post-office, Canteen, Stationery, etc. to the staff and students is nearing completion in the campus.

The achievements and the future plans of the University have well poised the university assessment and accreditation at national level. At present, the university is involved in this exercise. ❑

Regeneration of Quality Research in Higher Education: Ways Ahead

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Vision

The socio, economic, scientific and cultural development of a nation depends on the quality of the population. The quality of the population mainly depends upon the type of education system prevailing in the country. All the countries attempt to impart quality education to the population. They develop vision documents and assess the manpower requirements for the coming years and develop programmes accordingly. The investment in education, particularly in higher education, is permanent and the result will come only after years. According to Newman, 'If a practical end must be assigned to a university course, then...it is training good members of society'. Hence investment in higher education is futuristic aiming at the social, political and economic development of the nation. It deserves a better attention than what it gets at present. Developments in all spheres are possible only through generation of new ideas through research. The concept of research should be introduced at each and every step of the learning process in contrast to the understanding of research as an activity leading to a research degree. In nutshell regeneration of quality research in higher education is the need of the hour.

Research is concerned with the analytical examination of facts exploring newer dimensions of knowledge and contributes substantially to the subject in question. All this is done in line with the theoretical formulations. In a sense, research is an endeavour to promote qualitative improvement of what is already known and an exercise to investigate the theory.

According to Havana Conference on higher education the major objective of research is the production of 'endogenous knowledge'. "It advocates attaching due value to the capacity to produce an endogenous knowledge that can enable different modalities of an intelligent and solidary development, so as to increase competitiveness, organisation and efficiency capabilities. This in turn will help recons-truct both the State and Society. According to Tokyo Conference on higher education, "the research should help to open up access to scientific discoveries and modern technologies. The research must lead to appreciation, internationalisation and dissemination of human and social values, with special attention to the goals of peace and democracy and the protection of the environment. In a nutshell, all research activities should be scientific, technical and humanistic". The research should promote 'innovation chain' i.e., the co-operation between higher education and local self-Government industry and business. Close links between research and teaching open up opportunities for associating experienced researchers with the teaching process.

Palermo Conference on higher education draws attention to the multi and inter-disciplinary research which is essential for solving acute social problems and which thus contributes to sustainable human development.

The Daker Conference on higher education recommends that 'research be made to bear a closer relation to the needs of society and that account be taken of criteria of social relevance applied to teaching, research and consultancy activities'.

According to Beirut Conference on higher education, 'research by higher education must contribute to the understanding, anticipation and solution of the problems of the region.

According to Delors Commission Report published by UNESCO: "With the growing role of scientific and technological knowledge in society, in industry and trade, and in the applications of research to the problems of human development, institutions of higher education have an extremely important duty to maintain their capacities for high-level research in their fields of competence. Research in both the social and natural sciences must indeed be independent and free from political and ideological pressures, but must nevertheless contribute to the long, term development of society".

The proceedings of the World Conference on Higher Education visualises that 'the injection of public funds into the university for research requires accountability that may be directed by an outside body and not by reliance upon the University's own evaluative procedures.

Universities are the powerhouses of knowledge. Further, as quoted in *The Economist*, "It is the university that must be the power house of knowledge economy". They should generate knowledge, which is possible only through research. The advancement of knowledge and the creation of new knowledge are one of the basic missions of the university. Many leading universities became popular because of quality research activities. The outcomes of the research activities are shared by different universities globally. Teaching, Research, Extension and Field Outreach are the major functions of university/college teachers. The teacher is the cornerstone of the higher education system. The participation of teachers in research and the linking of teaching and research are essential to ensure the quality and effectiveness of higher education to contribute to the progress of knowledge and to develop endogenous capacities for research and Research and Development.

Teaching and research should go hand in hand and these two are inseparable components like the two sides of a coin. A higher education institution/university/college will fulfil it's responsibility only if their teaching staff performs intellectual creation through research. Research is the fulcrum of the university system. Hence it is essential to develop a research culture among the teachers of universities/colleges. Each university should develop suitable strategies to strengthen its research capacity including widening the vistas of knowledge through research and dissemination of findings. Conducting such research should be an obligation of the teachers at university teaching departments/colleges. The teachers should clearly spell out their views on the objectives of research in higher education, its quality, fields and types of research, the links between teaching and research, usefulness to the society and the means of promoting and developing research.

The creation and transmission of knowledge is also aimed at providing higher education with the leading role in the critical study of economic, political or social changes and in 'prospective efforts'.

Higher education institutions link themselves with the major university networks and thus increase their interaction with the academic community. No institution can hope to master all the areas of knowledge and hence interaction with the academic community is essential to equip the academics with up-to-date knowledge. The vision and Action of World Conference on Higher Education in the Twenty-first Century states that "Higher education institutions and research institutes outside the educational setup need to collaborate to promote the principle of universality of knowledge". Our industrial development helps rapidly transferring socio-economic condition of the people and hence the need of the hour is careful assessment of the problems prevailing in the researches carried out in the universities/national research institutes. The scientific research area is not encouraged due to various reasons like low employment opportunities, poor financial assistance, deterioration in science education and low priority to science promotion. The main reason behind the declining interest in pursuing research in science and technology is the scarcity of job opportunities for highly qualified persons. This will give a negative impact on the prospects of science in the country. The rising trend of brain drain has also seriously affected the prospects of research in Indian science scenario.

The developments in Science and Technology through research and their impact on economic development and life styles have created new needs for co-operation with industry and research/development. Universities/colleges contain a large population of the personnel educated for intellectual creation. Hence it is essential that this potential be turned fully to account, not only for teaching purposes but also to contribute through research in science and technology and in the social and human sciences, to the advancement of knowledge to the creation of new knowledge, to cultural development and fulfilment of solving problems, posed to sustainable human development and to the dissemination of the ideas of peace democracy and protection of environment. This is the duty, the responsibility and the function of higher education and it's personnel, the teaching personnel in particular. Research and intellectual creation are necessary to ensure education of a higher standard that is up-to-date and to develop a critical innovative approach, creativity and the desire to advance not to be content with what one already knows. Thus the research has visualized to increase the quality of future generation and to introduce many innovations in the fields of Humanities, Science and Technology.

Reality

India has a well-connected, centrally controlled largest education system in the world. During 1950-51 there were 27 universities and about 700 colleges and about 1,74,000 students while now there are 307 universities, 13,000 colleges and about 7.5 million students. This explosion of numbers occurred during the past 50 years. But only very little is happening in terms of science, technology and academic quality. According to Human Development Report-2002, "India could claim only one patent per million residents in 1998" and the CSIR report reveals that 'In entire history of CSIR of India, only three out of over 20,000 papers published by the scientists have been cited 100 times against a world average of one in every 250'. A paper with 'thousand citation counts' (i.e., the paper that has been cited 1000 times) is either nil or extremely rare. 'Citation counts' can only reveal quality.

It is a paradox to state that, during pre-independence period it would be obvious that the British India produced more wellknown scientists/Nobel laureates like Satyen Bose, Meghand Shah, Dr CV Raman, Dr JC Bose, Dr RN Tagore et al ., while post-independence period gave no Nobel laureate except only very few scientists. Thus there is a deplorable deterioration of quality in all spheres including higher education system. The literary and cultural heritage of India reveals that we had a strong research and analytical base as exemplified by our Vedas, Upanishads and Classics. But McCauley introduced English language and he made India 'a nation of clerks'. Consequently people became complacent with white collar jobs and indulged in laziness without applying their faculty either on self development or on national development; resulting in deterioration of quality. Thus in India it is very difficult to change a system, which is in force. People find comfort and feel secured in the existing system and they are afraid of the fact that they may become unfit if the system is altered. Curriculum change always ends up in controversy. Every attempt of change will be interfered by either religion or regionalism. The post independent Government could not even find an important place to our own language Sanskrit. If Hebrew can be received and made the *linguafranca* of Israel, the most powerful and modern nation, then why can't Sanskrit in India? According to Dr Murli Manohar Joshi, Sanskrit can be made a global language with the help of computers. It was the original language of all major subjects including Mathematics and Physics. It was experienced that even Sanskrit teachers are against Sanskrit. In the field of research national and international research institutes and funding agencies offer a variety of programmes to scholars. But it is a pity that our teachers and research scholars do not avail these opportunities and facilities.

It is a fact that the universities mainly conduct academic research only for the sake of producing PhD degrees. Teachers publish research papers only for the sake of publishing papers to fulfil UGC conditions for promotion under career advancement scheme. How many of the University/College teachers carryout minor/major research projects with the financial assistance of State/Central Governments/various funding agencies? It is a matter to scrutinize the various research topics selected for PhD/MPhil degrees. Whether these topics have any social relevance? At present there is no apex body or mechanism to check the applicability of the topics/areas of research that will help the socio economic and scientific development of the nation. There is no mechanism to check the quality of research.

What are the 'motivations' for researchers in Science or Social Science or Technology? There must be proper motivation for researchers; facilities for research; ensure the quality of research work; and the extent to which research outputs are being utilized. It is a reality that ever since research degrees became essential qualifications for appointments and promotion in educational institutions, 'quantity' gained importance over quality. Since there is no fixed criterion for the evaluation of thesis in all universities, mainly examiners evaluate the thesis based on relations and recommendations made by the guide, colleague, friends et al. Normally the student in consultation with the guide finalizes the topic for PhD degree on the basis of the convenience of the guide and no importance is given to the need of the discipline/institution/society/university or nation. This is due to the fact that freedom is vested on them. These people are least bothered about the quality of researches and their findings.

It is to be noted that neither the Government nor the University fixes areas of research for PhD degree and hence there are a number of research studies repetitive in nature. Sometimes they may make some insignificant minor modification and the research findings can also be challenged, since the data are usually collected from irresponsible respondents, who fill-up the schedules without applying the mind, which may result in wrong findings.

In certain cases findings are also derived as per the wish of the research scholar and the guide. In certain universities there are unhealthy competition between guides to enroll maximum number of students for PhD programme under their supervision; subsequently to increase the pages of their curriculum vitae, because a good *curriculum vitae* is required to get promotion from Reader to Professor in the University, and also to consider for higher positions.

At present millions of rupees are being spent in the form of fellowships and scholarships which cater to the need of the researchers and not that of the community. Many of the scholars will not even complete the PhD. They may continue till they get a job. Hence for majority of students, it is a stop-gap arrangement. As far as girls are concerned the research will be over as soon as they get married.

It was reported in many periodicals that the research topics of various disciplines have no relevance to the present day life and it is simply to produce a PhD degree. An article was published in the '*University News*' about the pathetic conditions of PhD theses produced by different Universities in the field of Adult Education. Accordingly "the Adult Education theses are there in the libraries as dust catching materials". How much money and time have wasted to produce those dust catching materials? Similarly many researches have been carried out by the Department of Education of various universities and produced maximum number of PhDs than any other discipline. Their main focus of research was usually on various aspects of school education including teaching-learning process. But more than 50% of the secondary school children fail each year and the total loss is approximately Rs. 100 crores per year. This shows that the policy makers neither do not apply these research findings or if applied, the findings are futile. Hence there must be concrete mechanisms to assure quality and relevance of the topics selected for the PhD degree programmes and research programmes, without any compromise.

Rejection of PhD thesis by examiners or during open *viva-voce* is a rare phenomenon in Indian universities. Open *viva-voce* examination helped to increase the expenditure of the candidate and generally conducted as a ritual. It is the guide who suggests the examiners to adjudicate the thesis. Normally the list contains only his/her friends. The present guides generally lack professionalism. In order to develop professionalism, it is desirable to conduct national level tests by UGC to identify competent and quality guides who can practise professionalism. There are guides and PhD degree holders of long standing in universities who never guided a single student. They should not be considered for any promotion. There are very good competent, committed and qualified guides in certain universities/Institutes and they conduct quality research and produce quality students.

At present the teachers lack 'Academic Aristocracy'. Teaching is not a service or mission, but it is a livelihood to them. Teachers must be made accountable to the society and higher authorities. Social auditing should be introduced. Unless there is a strong authority or mechanism to control the teachers, it is very difficult to extract quality work from them. This is the reality prevailing in our country. The moment a teacher gets appointment he/she stops further academic activities and gradually becomes redundant and unproductive. Whether he/she teaches or not, whether he/she carries out research or not, his/her salary is assured, service is protected even after death. Unless the teachers are prepared for an attitudinal change, no miracle will happen in the higher education scenario.

It is suggested that there must be a Monitoring Committee at the University level to monitor various research activities carried out by the University Department/Centres/affiliated Colleges. Regional Seminars/Workshops in collaboration with research institutes/local self-Governments/Industry, shall be conducted to develop need based research topics. Such seminars/Workshops will encourage interdisciplinary/multi disciplinary research programmes by identifying relevant research areas. Before starting a research programme, its applicability and relevance should also be specified and how its outcome is going to be benefited by the Community/Government/Research Institutes.

An institution that is ready to commit itself towards continued improvement will focus on quality research. This will pave way to cultivate a habit of formal and informal inquisitiveness. Now quantitative research has been replaced by qualitative research. According to NAAC, every institution must have an internal quality assurance cell. Apart from many assigned activities, the cell should carryout research on institution effectiveness also. Every Department/College would need data on teaching and research performance, student achievement, institutional financial status, student enrolment drop outs etc. Such data are essential for monitoring and accountability. All teachers should carryout Action research programmes to solve the local problems then and there.

In certain cases it is to be noted that good research findings were not used by the policy makers. Good research findings provide lessons and guidelines for policy makers and Government. They help to identify the strengths, weakness and gaps and provide useful lessons to improve upon. Sometimes it may so happen that the number of studies conducted may be far more than the reported ones. Conducting research and utilization of findings are equally important. In practice majority of the researches are either utilised or unutilised. These are kept in the library to be researched again. There must be a regular flow of research findings from the researchers to the practitioners and policy makers.

According to LN Dahiya (Quality of Doctoral Research in India: Some Monitoring and Control Issues, University News, 39 (45) Nov 5-11, 2001) "It is said that more than 80% of PhD's are bogus, stereotype, repetitive, plagiarized and hence 'irrelevant'. This may be sometimes exaggeration, but truth is there. UGC introduced a handsome salary to attract young talented and qualified teachers to the higher education system, but in vain. Students with good academic background will either leave the country or enter civil services. Thus average students register for PhD, which may ultimately lead their entrance to University system with the PhD degree. A poor PhD student will become a poor PhD guide of tomorrow and the product will further become poorest. The next generation of students can't expect more from them. UGC introduced FIP to enhance the quality of teachers. Many of the earlier scholars of FIP are yet to submit their PhD thesis. Academic Staff colleges were established to train and motivate the teachers. But in reality, the teachers undergo orientation course or refresher course in Academic Staff Colleges only to satisfy UGC conditions for promotion. How many college teachers got motivation to do PhD degrees or carryout research projects or published research papers, after undergoing the ASC programme? It is a matter to be studied. According to P. Parameswaran 'Everybody agrees that the Education scenario of the country need a thorough overhauling but there is no unity how to proceed with'. (*Mathrubhumi* dt. 20/08/2003). Thus we have again proved our 'diversity in unity' prevailing in important areas of national development! We must have our own model comparable and compatible with international standard of education. This shows that a 'paradigm shift' is essential. UGC, universities, NIEPA, Civil Service Organisations and Research Institutes have to take leading roles and shall develop 'Nation friendly' and 'State friendly' policies for debate, discussion and implementation. The modalities and operational details for the improvement should be chalkedout objectively by considering the ground reality, but "who will bell the cat?"

Twenty Five Points for Consideration/Discussion

1. Appropriate monitoring mechanism should be developed to ensure quality of teaching, research and extension activities of teachers at college/ university level.
2. Ensure the social/industrial/scientific relevance of the research problem.
3. Confirm that the benefit of the research findings are useful for the development of the nation.
4. Conduct national level test to select the research guides. Only teachers with good academic track record and public reputation need be permitted to guide.
5. Check the 'citation count' of the research papers published by the teachers before considering for promotion under career advancement scheme.
6. Internal quality assurance mechanism shall be developed within the institution.
7. Minimise the number of research scholars to two/ three depending on the rank of the guide.
8. College teachers can become only co-guides along with a university teacher.
9. Industry/Lab Scientists etc. shall carryout research projects in collaboration with university teachers.
10. FIP programme should be modified and no room should be given for misuse of the scheme.
11. The programme of Academic Staff College should be modified, without further delay.
12. The vacation is meant for updating knowledge of the teacher to become more competent and fit in the profession. This time shall be used for research activities/attending seminars/workshops/Books publication etc. It should be enforced, monitored and some accountable mechanism should be developed. Wasting the time by utilising the Government money is not justifiable.
13. Social auditing and performance auditing must be introduced to ensure accountability.
14. Appropriate mechanism should be developed to avoid repetition of research topics at UGC level. UGC may develop mechanism to cross check the research topics of various universities before granting final approval by concerned universities. It can be done very easily by developing suitable computer programmes.
15. Research grant to research projects (Major and Minor) shall be sanctioned only after confirming the relevance and usefulness to the community.
16. Pre-PhD course must be made compulsory, with written examination.
17. Interdisciplinary research cell shall be established in all universities to select the topics and to promote interdisciplinary research.
18. University-Industry and Campus-Community linkage should be strengthened to develop various research programmes.
19. All part-time research programmes should be stopped.
20. Vice Chancellor should personally go through the report of adjudicators and *Viva Voce* examiners before awarding PhD degree.
21. Efficiency bar should be introduced in the UGC scale of pay and it should be clubbed with quality research leading to the guidance of PhD degree at regular intervals.
22. Make sure that the research scholar is submitting the PhD thesis, if not provision must be there to recover the scholarship.
23. Awarding of PhD degrees through distance mode should be stopped forthwith.
24. In order to attract and retain the talented, qualified candidates, it is suggested that the First rank holders of MA/MSc/MCom/MTech etc. may be appointed as Lecturer immediately after the announcement of result on contract basis for five years and permitted to carryout research also. If the candidate is found to be worth, allow to continue and offer permanent appointment.
25. Revamp, Restructure and Regenerate the entire education scenario as nation friendly, state friendly and student friendly in tune with globalisation. ❑

Excellence in Higher Education: Points to Ponder

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The problems of the Indian education system relate to access, equity, number, relevance, quality and resource crunch. There is a tremendous churning taking place in higher education the world over. Nations are struggling to cope with the diametrically opposite demands of quality education and a phenomenal increase in the number of students wanting to pursue higher education. India being a developing country is no exception. In fact she has a much tall order as both the quality and quantity of higher education requires better academic and physical infrastructure in spite of resource crunch, while many other equally important sectors also deserve adequate resource allocations. Besides this, there is a whole spectrum of issues having direct or indirect bearing on the efforts for attaining excellence in higher education; only a few selected crucial issues have been taken up in the present paper for the purpose of discussion.

The Quality Consciousness

The growing concern for quality culture in higher education institutions in the country assumed added significance with the setting-up of the National Assessment and Accreditation Council (NAAC) in the year 1994. The concern has triggered academic initiatives for quality evaluation, quality sustenance and quality upgradation. Making NACC accreditation mandatory by UGC for the colleges before December 2003 is a welcome step. This set deadline is, however, bound to put tremendous pressure on the NAAC's resources as upto 29th April 2003 a total of 512 institutions (94 universities and 418 colleges) have been accredited by it against the total number of 253 university institutions (18 Central universities, 178 State universities, 52 Deemed universities and five institutions established through the State legislations) and 5,013 eligible colleges out of 13,150 (5,313 rural and 7,837 urban) colleges in the country even as on 31st March 2002.

The University Grants Commission, a statutory organization established by an Act of Parliament in the year 1956 for the purpose of coordination, determination and maintenance of standards of university education has implemented a number of schemes for promotion of excellence/quality in higher education even prior to the emergence of NAAC on the scene.

The schemes not only provided opportunities to the educational institutions and individual researchers to augment their capacities and capabilities to undertake quality research but also actively participate in such endeavours at global level to share their knowledge and expertise with fellow participants and benefit from each other experiences.

Three Dimensions of Higher Education

Quality of teaching, research and extension—the three dimensions of higher education have invariably been in sharp focus due to various policy interventions and programmes initiated over the years by the concerned statutory/regulating bodies such as the University Grants Commission (UGC), All India Council for Technical Education (AICTE), Medical Council of India (MCI), Pharmacy Council of India (PCI), Council of Architecture (CoA), Bar Council of India (BCI), National Council for Teacher Education (NCTE), Dental Council of India (DCI), Indian Nursing Council (INC) etc. It is expected that while the collegiate sector will excel in teaching by adopting various teaching/learning pedagogies, the Universities will primarily function as quality research hubs, both for basic and applied research, being equipped with the highly qualified inter-disciplinary/trans-disciplinary faculty and latest/advanced technology/equipment etc. Universities are expected to groom their intake into excellent human resource reservoir on which any nation may feel proud of. While it is expected that teaching and research be complementary and supplementary to each other, the third dimension, namely extension, should be more visible and serve as a vital link between the institution and the society.

By and large, unfortunately this is not happening in a fairly good number of institutions in the country due to various reasons. On one hand, while the mushroom growth of higher education institutions, and some of them even without necessary infrastructural facilities being non-viable due to poor enrollment has posed one more challenge to the policy planners and educational administrators; on the other hand, our premier institutions like IITs and IIMs are performing exceptionally well and have now established their edge over their contemporaries in the knowledge based world economy. Our graduates have left their deep imprints in almost all fields of higher education even in the most developed countries. It has been reported that the 3.2 millions of Indians constituting a mere 1.5 per cent of the US population give America 12 per cent of Xerox employees, 17 per cent of Intel scientists, 28 per cent of IBM technologists, 34 per cent of Microsoft employees, 36 per cent of NASA scientists and 38 per cent of doctors. But on the whole, still a lot needs to be done by the Indian higher education system to attain excellence and face emerging challenges at the global level.

Three Crucial Ingredients

Academics, finance and management/governance are the three crucial ingredients in the field of higher education. It is evident that sincere efforts have been at various levels to upgrade the academic standards through observance of academic calendar and minimum standards of instructions, periodic curriculum revision, examination reforms etc.; financial crunch on the part of the State has often been considered as one of the crucial impediments for promotion of excellence in higher education. However, this varies from State to State. In this context the feasibility of granting the status of central university to all the universities of the country and pooling of both the Central and states' higher education sector allocations for the purpose of disbursing development and maintenance grants by the Center to these universities may be explored and experimented with. This will at least ensure fair and equitable distribution of nation's resources for development of higher education irrespective of the financial health of a particular state.

One may not deny the fact that the cost of imparting higher education has registered manifold increase over the years due to hike in general price index while the fee structure remained more or less stagnant over the decades, thus causing swelling burden on the State's resources. Institutions, therefore, have to generate their own resources to meet their running cost. But even in such a situation, the fact of the matter is that even the available financial support from the state to higher education is not being fully and properly utilized in time by some of the grantee institutions due to obvious reasons. This needs to be constantly monitored. The proposal of linking of one-third of the UGC developmental assistance with performance/accreditation of the colleges is expected to revitalize the collegiate sector. Creation and proper maintenance of various infrastructure facilities, timely availability of latest text and reference books, equipment etc. also provide much needed motivation to the faculty for pursuing excellence in higher education.

Adequate attention, however, seems to have not been paid to the most important and crucial ingredient- the management of higher education and also the management/governance of institutions of higher education. It is the acknowledged fact that effective and healthy management practices bring a sea change in the process of achieving the end results. With regard to improvements in management of education, the prime areas of concern have so far been training of educational administrators and setting up the State Councils of Higher Education. Recently introduced development parameters (academic/teaching, research and governance) for assessing the performance of the university may be applied to collegiate sector in near future, after suitable modifications, to objectively evaluate the performance of the institutions on identified parameters and suggest remedial measures. This objective introspection will help the institutions to tighten the loose ends and progressively perform better in future.

National Education Commission

With the objective to give more focused attention to the proper and coordinated development of higher education in each specialized field like technical, medical, nursing, teacher education etc., the Government of India has established statutory bodies over the years. However, a close scrutiny of the mandate, objectives and functioning of such statutory bodies reveals that there is some sort of overlapping in their functioning resulting into confusion even in the minds of the higher education institutions. These calls for creation of an apex body for higher education, 'National Education Commission', as envisaged in the National Policy on Education and the Programme of Action to draw integrated policy, curricula and syllabi and also coordinate the activities falling under the rubric of educational system. This may also reduce/rationalize the visits of multiplicity of such bodies/agencies to the universities for various purposes.

State Council of Higher Education

Effectiveness of the various quality improvement programmes/measures initiated by UGC and other concerned statutory/regulating bodies in the field of higher education largely depends on the efficacy of the delivery system wherein stakeholders have a crucial role to play. 'Education' being on the Concurrent List of the Constitution is a baby to be nourished by all concerned. Lack of coordination and effective liaisoning among the stakeholders often results in under/mis-utilization of resources and overlapping/duplication of efforts. A proper coordination mechanism at the State level by creating 'State Council of Higher Education' under the leadership of the Chancellor may enhance effectiveness of management of higher education and facilitate resolution of many conflicting and pending issues of the state universities. With a view to give focused attention to such crucial matters, the Chancellor's office may create a separate secretariat through a policy decision at the appropriate level.

All India Higher Education Service

'Educational administration' is not synonymous with the 'general administration'. A well-knit team of motivated, sincere and dedicated officers/staff down below the line under the dynamic leadership of the Vice Chancellor, a known personality in the field of educational administration, initially appointed at least for a plan period and empowered with necessary statutory authorities, will certainly enable the University to scale new heights and excellence in the field of higher education. In this context, the question of appointment of Vice Chancellors from the well defined 'consideration zone deserves special attention. Since human resource is a most crucial resource and the Universities are expected to produce high quality human resource by grinding, polishing and tuning their intake to match the national requirements, creation of a cadre of 'All India Higher Education Service' by the Government of India to man various cadres of universities/institutions of higher education/learning, our 'Modern Temples', is perhaps the dire need of the hour. The university through its College Development Council may serve as a friend, philosopher and guide to its affiliated and constituent colleges so as to enable them to function effectively and efficiently and experiment with innovations within the given autonomy.

Autonomy with Accountability

Today our universities enjoy a grater extent of autonomy/flexibility in their working. 'The extent of autonomy' being enjoyed by universities/educational institutions varies from State to State and even among/between the institutions and even between the departments of the same university in the state. Education, being on the concurrent list of the Constitution often enjoys best of both the worlds. While autonomy/flexibility to talented teachers and quality institutions is necessary for promoting innovation and excellence, this has to be exercised with great caution and be within the total framework of the guidelines/rules and regulations of various concerned statutory/regulating bodies created under the law for coordination, determination and maintenance of standards of higher education. Granting autonomy to the well established, reputed and potential colleges and thus empowering them to determine and prescribe their own course of study and syllabi, frame their own admission rules with due regard to state reservation policy, evolve method of concurrent/periodic assessments, conduct examination, notify results, and use modern tools and techniques in imparting knowledge for achieving higher academic standards seems to be the only safe and better way to improve the quality of undergraduate education. The Tenth Plan proposes to increase the number of autonomous colleges from 135 (as on 31st March 2003) to 10 per cent of the eligible colleges (5,013 as on 31st March 2002) by the end of the Plan to spread the culture of autonomy as colleges with academic and operative freedom have generally been found doing better and have better credibility.

GATS and Higher Education

Higher education, being a tradable commodity under GATS (General Agreement of Trade in Services) has been internationalized. GATS is a comprehensive legal framework of rules and disciplines covering 161 service activities across 12 classified sectors including Education. With advancements in the field of information and communication technology (ICT), traditional boundaries indicating geographical jurisdictions of the universities have broken down and distance and other modes of education have reached almost all corners of the world. International competitiveness in the field of higher education has assumed a significant place and tremendously increased the quest for more and more latest knowledge in the field. In the given situation, it is certainly a tall order for our Indian Universities to cope with the emerging global scenario.

Curriculum Revision

Continuous renewing and updating of the curriculum for taking care of the fast paced developments in the subject concerned and providing students with an up-to-date knowledge is an essential ingredient of any vibrant university academic system. Incidentally, periodic updating of curriculum has not been found to be a matter of serious concern in the university system. The recent move of UGC to bring out model curriculum in 32 subjects was an attempt to take care of the lacunae, defects/shortcomings in the existing curricula and introduce innovative concepts, provide a multi-disciplinary profile and allow a flexible 'cafeteria' like approach to cater for frontiers developments in the field. Faculty and students equipped with latest knowledge in their respective subjects may very well compete at national and international levels. However, it is certain that implementation of revised curricula requires many more hours of home/library/laboratory work on the part of the faculty to tune/equip themselves with the recent/latest developments in the subject and then deliver accordingly.

Today all knowledge is inter-disciplinary. Multi-disciplinary approach has introduced curiosity/ enthusiasm among faculty and students to learn from other subjects/fields and broaden their horizon and thus equip them with necessary knowledge and skills to deal effectively with the emerging situations. Cross-fertilization of ideas in an open and congenial atmosphere is bound to lead to quality in higher education. Serious participation of faculty in national/ international quality improvement programmes and exploring/utilizing such opportunities to the optimum is essential for growth of higher education. There have been many 'successful' and 'not so successful' institutions and their rich experiences may lead to required innovations/interventions at various levels.

Quality of Research

Quality of research requires serious attention of all concerned. On an average, about 11,000 PhDs are awarded annually by our Indian Universities and with each successive year this number is growing. But for reasons best known to everybody, quality of majority of our doctoral/post-doctoral work needs substantial improvement. Building infrastructural capacities of the institutions and teaching and research capabilities of the faculty are the crucial areas for serious consideration and action. Undertaking inter-disciplinary research; publication of quality research papers by the researcher prior to submission of dissertation/thesis; and giving seminars on the topic of the research focusing on methodology, analysis and interpretation of findings be made mandatory. Evaluation of the thesis by a foreign examiner may lead to quality consciousness in research and academic auditing at each stage of research be made an inbuilt component of the system.

Examination Reforms

Examination reform has been a serious issue but not much has been done. Examination reflects the whole education system and, therefore, should not be limited merely to testing of educational achievements/ attainments of a student but should also serve as a reliable tool to assess the effectiveness of instructions and motivation of the students, and inculcating the real value of education in the students. This may be achieved by employing multiple criteria, multiple technique and multiple sources of assessment. All this undoubtedly requires committed teaching work force.

Universities have generally been found lacking in enthusiasm in respect of the implementation of various measures of examination reforms such as entrance test for admission to postgraduate courses, semester system with a minimum number of teaching days, continuous internal evaluation with a certain degree of openness, development of question banks, grading system with equivalence table for marks and grades, revision of syllabi and question papers, and the conduct of examinations in the universities with a view to improving the reliability, validity and objectivity of evaluation and bring about a closer integration of teaching , learning and evaluation. Instances of paper leakage, improper evaluation of examination answer sheets and revaluation scandals are, therefore, hitting the headlines almost every year. Some Universities have taken measures to arrest the menace of mass copying but with little success. Sincere efforts of all concerned will not only be instrumental in bringing the educational and examination system at par with the global standards and practices but will also instill a sense of confidence among the students and restore the faith of the people at large in our educational system.

Summing up

Meticulous planning, timely supported with requisite resources in adequate quantity/quality is likely to result into attainment of set goals within the given time frame. However, with the rapid advancements in the domain of knowledge, the heights once attained will only be a benchmark and inspire the system to touch even much higher mark in the years to come. At no stage one may feel contended with the obtained results as the quest for a much higher level of excellence/quality will certainly push all those interested to burn their mid-night oil so that our great nation can keep its head high in the stiff challenging international competitive arena wherein 'knowledge is power'. ❑

Professional Ethics and Human Values

R Natrajan, Chairman, All India Council for Technical Education, New Delhi delivered the Convocation Address at the Faculty of Applied Sciences, Life Sciences and Sports Medicine, Guru Nanak Dev University, Amritsar on April 7, 2003. He said, "Globally, in recent times, the Corporate Social Responsibility (CSR) paradigm is emerging as an important feature of business philosophy, reflecting the impact of business on society in the context of sustainable development. The French Parliament has recently published the requirements of a new law that mandates all French corporations to report on the sustainability of their environmental and social performance. Companies are required to clarify the policies and positioning on environmental and social issues, including human rights, local impacts and dialogue with stakeholders, and then to build a structured and consolidated reporting system. The 'new economic regulations' law (NRE), while focusing on financial issues such as increasing the transparency of take-over bids, improving corporate governance, and strengthening antitrust regulation, has also legislated the disclosure of companies' triple bottomline performance, which considers not only financial, but also social and environmental indicators". Excerpts.

A Convocation is a Day of Celebration. The successful Graduands are celebrating the culmination of their efforts and hardwork; the University is celebrating the success of its most important stakeholders.

A Convocation is also a Day of Thanksgiving— The students should be thankful to the university: Faculty, Staff and Management, for providing them the opportunity to enrich their qualifications. In a reciprocal fashion, the university should be thankful to the students and their parents, for providing it the opportunity to serve the cause of education.

The Raison D'etre for Education

In the classical tradition, education was not only for preparation for employment. In the post-industrial era, formal education is a pre-requisite for employment. Educated and trained manpower is one of the major inputs for economic and social development. There is close nexus between educational planning and manpower planning. This requires precise information on the type and level of higher education, and the quality of skills for different industry sectors.

'Education' has a wide connotation. There are divergent interpretations, on the basis of: knowledge, skills, training, experience and attitude; individual's development and preparation for discharging duties as a responsible citizen; continuous and life-long process; a conscious, deliberate and planned process, designed to modify behavior, in a desirable and socially acceptable way, to bring about specific knowledge and skills.

There are several goals or aims of Education:

- **Individual Aim** : To contribute to the development of the individual; to make him/her selfreliant.
- **Social Aim:** To provide education for citizenship, social efficiency and social service.
- **Knowledge Aim:** Acquisition of relevant knowledge.
- **Moral Aim:** Related to character formation.
- **Vocational Aim:** Deals with preparation of individuals for contributing to economic development, and national wealth, through productive employment.

The Education Commission, 1964-66, proclaimed that education should be related to: the life, needs and aspirations of the people; it should be a powerful instrument of social, economic and cultural transformation, necessary for realizing national goals.

New and Emerging Challenges in Higher Education

There are new and emerging challenges for higher education: increasing numbers of students aspire for higher education; rapidly changing job content and employment profiles require lifelong learning opportunities; while professors do not mind lecturing to large classes (with audio-visual supplements), marking exam, for these large numbers is abhorred as a chore; the work schedules of employed learners require courses to be delivered to them at their work-places, at times convenient for them; the wide spectrum of preparation and competence profiles of learners demand customization of learning packages, and individual and self-paced instruction.

There are two revolutions which offer new opportunities to enable the new challenges to be met; these are Education Technology and Information Technology revolutions. The Education Technology revolution addresses both the issues of technology in education, and of technology of education. As far as the IT revolution is concerned, the Internet allows virtual classrooms; digital libraries provide knowledge repositories; the Web offers up-to-date material for seminar discussions; computer simulation offers an alternative to labs. Thus, technology is not simply an add-on service as computers or audio-visuals were before; it impings on the very soul of the university - knowledge transfer and knowledge creation.

Thus universities are facing a crisis today in two areas: financial and structural. Most universities world-wide are dependent on public funds, which are drying up because of tight government budgets and other concerns. The economic value of academic research is also under scrutiny. Globalisation processes have thrust research effort also into the competitive arena; and the corporate sector not only demands quality, but also timeliness.

In terms of structure, students' numbers have been exploding on university campuses; the universities have been reluctant to change their programs, both in content and delivery; the universities are facing challenges from alternative providers of education and training, with more focus on employability; the university professors represent a breed of career academics who are quite isolated and insulated from the changes in the real world around them; distance learning is considered second best, even though universities are hard pressed to explain the superiority of the traditional classroom processes in effecting knowledge transfer.

The universities hardly seem concerned about who their customers or stakeholders are, and what they want. The employers—the users of university's products—continue to complain that the graduates—even from professional colleges—require considerable training before they become ready to be productive to the company. Many students are quite disillusioned that their degrees do not confer easy employability. The affiliating system, the lack of quality and accountability in the majority of universities, the clout of teachers' and students' unions, political interference—all add up to the erosion of the status and stature of the university as a bastion of knowledge and wisdom which should help the nation on its march towards prosperity and development.

Continuing Education Imperatives

Continuing education may be defined as the *further education of engineers after they have left a* university or similar institution, with a degree or diploma in engineering, or after they have achieved, by some other means, an equivalent level of qualification, while they had been employed in a professional engineering capacity. According to this definition, continuing education includes all the process of education which engineers undergo throughout their working life, which have a relevance to the practical problems they are likely to encounter in their careers. Continuing education not only refreshes and updates their specialized knowledge, but also broadens their horizons in related fields, leading to better job satisfaction. It provides also a stimulus to keep them intellectually alive, and it encourages creativity.

Continuing engineering education is usually undertaken in relatively small doses throughout an engineer's career. These short programmes, generally, are not deep forays into theory, but they tend to focus on what the employed engineers 'need to know'. Continuing education is not a substitute for neglect of academics during one's undergraduate programme, but it seeks to exploit new methods and new learning systems, in an effort to continue the process of education beyond the formal confines of a classroom.

It also seeks a complete integration of education with work during an engineer's productive life-span, which will be adequate to cope with the situation. It is also now realized that education cannot simply be confined to long extensive periods in early life, but must be distributed in shorter spans of time over a person's entire career.

Quality Assurance in Technical Education

While quality assurance has always been a matter of concern and significance in education, in general and in professional education such as technical education in particular, the recent qualitative expansion of an unprecedented nature, in India has caused educators to devote careful attention to the quality aspect. There already exist several regulatory mechanisms for ensuring minimum standards, before an institution is started. However, quality assurance entails an assessment of the performance of the institution, in delivering education of the prescribed quality.

The primary purpose of accreditation is to ensure quality control and quality assurance, commonly with reference to a certification system in the areas of education, training, testing etc.

The basic process inherent in accreditation is evaluation or assessment of the different subsystems and component processes. There are two parts to it: critical self-assessment, and external peer review. The former is performed by the faculty as a part of the support materials, and if carefully and effectively done, can be a valuable strategic tool.

There are several positive consequences of accreditation—for the institution, for the faculty, students, and staff, for the parents of students, for the university administrators and for the general public. The accreditation criteria define the nature and scope of pre-requisites for institutions imparting technical education, and the profile of a good institution. For instance, since the criteria demand that every institution has a mission and goals, industry/ institute interaction, and research and development, we have seen institutions strive to satisfy these requirements. Accreditation also promotes awareness and replication of good practices (as in the case of energy conservation and environmental protection).

The Role of IT in Education

Information technology is providing just incremental improvements so far. In the future, our lives and livelihood will be substantially transformed by IT devices. In PC-based learning, for instance, IT will be a powerful 'thought support' system, when compared to a text-book or a lecture, in view of the following features: multimedia, interactivity, swift feedback and feeling of control. New technology by itself may not be sufficient to improve education, but appropriate technology will help teachers to do a better job. An educationist has said: "The textbook is the wrong medium for college today; I call it pedagogic polyester. These days the world changes every six months, and the textbooks come out every three to four years. The technology is now in place to keep up with change, but textbooks can't do it".

The Role of Computers in Education

There appears to be a niche for computers in education, arising out of its unique features, and a set of do's and don'ts for employing them in this role:

- Computers are generally good for educational activity which requires significant interaction, as, for example, games and simulations. Hence, instructional SW should be highly interactive. Interactive learning environments are called 'Intelligent Tutoring Systems'.
- Due to their interactive capability, computers are well-suited to provide individualized and self-paced instruction.
- The instructional materials may be customized to meet various student needs, as for example, to cater to students with diverse backgrounds or ability levels. Thus CAL meets the needs of both formal education and continuing education.
- Computers are particularly good for explaining complex processes and interactions, through the use of animation and graphics, and possessing the capability of changing the values of parameters and observing the effects.
- Computers are well-suited for teaching problem-solving and decision-making skills.
- Computers should not be employed for replicating what other media can do better. For example, video is good for showing real, dynamic sequences, and printed matter is best for presenting a lot of text or graphical information. Thus, computer screens should not be designed to resemble printed pages, and animation should not be employed as a substitute for video sequences.
- Computers should be 'seamlessly' intergrated into the general educational process. The presence of the computer interface should not be an irritant to

learning, by requiring considerable efforts in utilizing it.

- CAL is not a replacement technology, but a complementary tool. The triangular student-computer-teacher collaboration and cooperation, with the *involvement of Teacher* as a *mentor or* guide, is essential for achieving optimal learning.
- The computer is not the panacea for all problems in *education / during the coming decade*, just as TV-based education (or instructional TV) was not the answer to all pedagogical problems in the 70's and 80's.
- The computer, of course, cannot be blamed for the unwarranted expectation that it would make learning 'easier'.

However, it is necessary to recognize some limitations to the use of Computers in education.

- CAL causes students to be inclined towards "trial and error" rather than deeper analysis.
- As of today, computers are seldom used in subject areas such as: reading, mathematics or science: they are largely confined to computing classes.

The majority of current CAL system is designed and implemented by programmers, not teachers, and is characterized by low-quality content and presentation, difficulty of use, and inability to engage the learner.

Professional Ethics and Human Values

Engineers have a heavy responsibility for human safety, in matters, for example, of location and construction of dams, nuclear power plants, bridges etc. In all these cases, the public have to rely for safety and protection solely upon expert engineering opinion, because no other segment of the population possesses the relevant specialized knowledge. Engineers play a significant role in improving the quality of human living, through better transportation, environmental protection, preservation of nature, alleviation of social dislocation resulting from technology solutions, etc. It has been said that "Engineering profession is the channel by which science can greatly improve our way of life, provided it assumes the initiative of leadership, rather than the passive role of the hired consultant".

'Ethics' is a semantically loaded word. It is, in general, concerned with concepts of right and wrong. A majority of people (especially young people) believe that any act or event can be measured against some absolute standard, with a complete determination of its intrinsic rightness or wrongness. More 'experienced' people like us often are not so sure!

Some ethical questions have religious connotations. However, it is not necessary to include religious aspects in order to accept the social desirability of ethical rules. Ethics constitutes the basic code of civilized behavior. Such roles constitute the basic constraints each of us agrees to practise in our relationship with others. We consent to these constraints so that our own existence may be free of confrontation, quarrel, tension, stress, etc.

When we say that a person 'has values', we imply that he has certain fundamental beliefs about, what is desirable or good, and that he attempts to use these in directing his life. For beliefs of this kind to be called values, two conditions are generally held to apply:

- Values are formed as a result of reflection and judgment; thus they are different from desires.
- A person's values are beliefs which he sees as applicable not only to himself, but others; essential to the idea of value is the function of commending.

The seven sins, according to Mahatma Gandhi, are:

- Politics without Principle
- Wealth without Work
- Pleasure without Conscience
- Knowledge without Character
- Commerce without Morality
- Science without Humanity
- Worship without Sacrifice

The Social and Societal Responsibilities of University and Corporate Sectors

Engagement implies strenuous, thoughtful, argumentative interaction with the non-university world in at least four spheres:

- Setting universities' aims, purposes, and priorities. Relating teaching and learning to the wider world.
- The back-and-forth dialogue between researchers and practitioners.
- Taking on wider responsibilities as neighbors and citizens.

University and industry have traditionally maintained informal ways of working together, including student internships, faculty exchanges, industry projects, etc. More recently, they are getting into a formal collaboration. Industry needs are also undergoing a change, such as for example, education and training programmes for adult learners, and professional development activities, such as customized classes, seminars etc.

Frequently asked questions relating to what makes an industry/university collaboration tick are:

- Why collaborate? What are the benefits?
- How to start, and then implement, a sustainable collaboration?
- What are the critical success factors?

There are many reasons for forming an industry/university collaboration. A recent survey came up with the following list: fulfilling an organization's education mission, accessing education and training resources for competitive advantage, achieving business growth and cost savings, enhancing organizational reputation, increasing revenue, accessing research and educational resources.

The survey also identified the benefits that industry/ university collaborations offer: a spectrum of engineering and training activities, such as classes, seminars, conferences, workshops, and certificate and degree programmes. They may be held on-location, either at the university or industry site, according to specific circumstances.

Globally, in recent times, the Corporate Social Responsibility (CSR) paradigm is emerging as an important feature of business philosophy, reflecting the impact of business on society in the context of sustainable development. The French Parliament has recently published the requirements of a new law that mandates all French corporations to report on the sustainability of their environmental and social performance. Companies are required to clarify the policies and positioning on environmental and social issues, including human rights, local impacts and dialogue with stakeholders, and then to build a structured and consolidated reporting system. The 'new economic regulations' law (NRE), while focusing on financial issues such as increasing the transparency of take-over bids, improving corporate governance, and strengthening antitrust regulation, has also legislated the disclosure of companies' triple bottomline performance, which considers not only financial, but also social and environmental indicators.

The NRE divides social reporting into three categories:

- *Human Resources*: including employment indicators, remuneration, equity and diversity;
- *Community*: including the impact on and engagement with local populations and stakeholders; and
- *Labor Standards*: including respect for and promotion of ILO Conventions.

Environmental reporting covers issues such as air, water, and ground emissions, as well as energy, water, and raw materials consumption.

For old economy compaines like the Tatas and the Birlas, corporate giving has been a tradition. Infotech companies like Infosys and Wipro are headed by ethical professionals and have a corporate conscience. When global companies came to India, they made CSR as important a stamp as ISO-9000. Recently, a CSR strategy is more like a fashion or brand statement. Rajat Gupta, MD, Mckinsey and Co. has this to say: "Enlightened coroporates see it in their best interest, and that is what is driving it. We give back not merely by writing cheques, but offering time, space and skills". Pradip Kashyap, who runs the American Indian Foundation from office space in New York's Madison Avenue, given by Mckinsey, says: "The corporate culture in the US makes it impossible to do business unless corporations reach out to their stakeholders through philanthropy".

There are indices which grade the performance of companies as good corporate citizens; this is often used by investors and customers for business decisions. In India, "the absence of a clear linkage between CSR and profitability is the principal barrier".

Concluding Remarks

The future beckons us into the unknown. If the recent past is any guide, change and rate of change will be dramatic and breathtaking. There will be challenges, but also opportunities. Serious attention to goals, directions and strategies will be required to respond to these changing times. Only those who exploit the opportunities, and are pro-active will survive and succeed. Let us match forward with confidence and wisdom. ❑

Refresher Course in Commerce

A three-week Refresher Course in Commerce was organized recently by the UGC-Academic Staff College, H.P. University, Shimla. About 36 teachers belonging to the universities and colleges of Himachal Pradesh, Punjab, Haryana, Rajasthan, Gujarat, Karnataka, Andhra Pradesh, Assam and Orissa participated in the Course. Prof. Yoginder Verma, Director of the College inaugurated the Course. In his inaugural address Prof. Verma reiterated that the collective efforts of the academia, can only bring about the coveted changes and provide solutions to many basic problems that are posing threat to our country. He prognosed that there is a paradigm shift in the field of commerce and the thrust has been upon ethical and legal organisations, replacing the orthodox and dogmatic objective of maximization of profit. The thrust of the Course was on emerging trends in commerce education and the topics deliberated during the Course were —Contemporary issues in Commerce; Impact of Globalisation on Commerce Education; Liberalisation and Indian Industry; Management of Change; WTO and its implication for Indian Business; Recent Trends in Commerce Education; Management of Finance; Tax Planning; Issues of VAT; Emerging Trends in Insurance Business; E-Commerce; Recent Developments in Banking Sector and Financial Sector; E-Business; Recent Developments in Auditing; Strategic Management; Knowledge Management; TQM; Japanese Management American Management; Contemporary issues in International Commerce and Trade; Research Methods in Commerce and Management; HRM; Emerging perspective in leadership, motivation, organizational culture etc.; Organizational Development; Power and Politics in Organisation; Stress Management; Towards effective interpersonal relations; Work Culture and Value System; Personality Development; Marketing Management Supply Chain Management; CRM-Consumer Relation Management; Trends in Advertisement Management; Rural Marketing; Issues Related to Business Environment; Contemporary Issues in Accounting (Responsibility Accounting and Human Resource Accounting); New syllabus of commerce its emphasis and implications; Effective Business Communication Skill; Accounting Standards in Indian context; Consumer Protection; Intellectual Property Rights; Recent Trends in International Business scenario; Indian economy in the era of LPG; Statistics and Research; Career opening in commerce education; Zero Based Budgeting.

Prof. R P Hooda, Head, Department of Commerce and Management, Kurukshetra University, Kurukshetra in his address said that in the global world the technology will continue to change at breathless pace forcing companies to find newer products and services to serve its customers. This reinvention requires new skills, new business models and change in the mindset. He further added that free global commerce and powerful new technologies have opened new vistas for Indians. He was of the view that only those companies that reinvent themselves and continuously enhance their skills and capabilities in a profound manner will survive a decade hence. Proactive approach towards the manner will be the different between those who survive and thrive and those who become footnotes of history. He was of the opinion that every organization has to create internal market for ideas and talent as well as harness the creative talent of its employees. He added that there was need to improve the communication skills of teachers. He emphasized the need to conduct Refresher Course in Research Methodology at Academic Staff Colleges.

Dr. Kulwant Singh Pathania, Deputy Director of UGC-Academic Staff College, said that the Academic Staff College apart from organising a number of conferences and seminars has organized 128 refresher courses and 66 orientation programmes since its inception in 1989. He said that in order to encourage the participants, afternoon sessions have been kept at the disposal of the participants. During the Course, activities like quiz programmes and panel discussions were also organized. Apart from academics the participants were given exposure to other fields by inviting resource persons from industries, banks, etc. Dr. D R Gupta, Coordinator of Refresher Course said that there is a need to overhaul the course curriculum of commerce and emphasized to make it more result oriented keeping in view the need and expectations of the society. He said that there is a need for the students to have an exposure of real market situation.

(Contd. on page 20)

International Students in

(Region-wise

Country	92-93 (1)	93-94 (2)	94-95 (3)	95-96 (4)	96-97 (5)	97-98 (6)	98-99 (7)	99-00 (8)	2000-01 (9)	2001-02 (10)
ASIA										
Eastern Asia										
"China (including "Hong Kong)"	6	14	28	27	21	23	28	18	20	16
Japan	27	34	52	46	45	50	38	43	48	65
North Korea	52	34	79	42	0	76	44	0	90	94
South Korea	18	20	0	22	72	26	19	65	23	38
Mongolia	4	11	23	28	65	25	19	20	18	29
Taiwan	1	1	0	3	5	2	5	1	3	6
Western Asia										
Bahrain	79	134	121	63	37	42	34	17	109	108
Iraq	27	26	6	4	9	20	23	41	41	24
Israel	3	9	0	5	8	3	0	2	10	0
Jordan	1299	860	700	291	98	251	80	111	58	92
Kuwait	39	28	26	20	14	12	16	42	34	30
Lebanon	11	5	4	4	0	0	0	2	5	2
Oman	7	9	15	30	48	144	74	111	216	216
Qatar	5	3	11	7	1	0	3	2	7	9
Saudi Arabia	45	38	69	25	8	14	5	18	44	31
Syria	37	40	19	12	17	17	16	14	30	25
Turkey	0	3	3	1	4	14	8	0	0	4
United Arab Emirate	49	39	47	25	27	23	26	94	68	58
Yemen	146	184	204	159	98	136	100	125	154	349
South & Central Asia										
Afghanistan	125	111	100	118	105	84	59	46	35	33
Bangladesh	565	736	129	1244	551	804	461	520	576	545
Bhutan	112	123	181	155	136	173	115	181	175	254
Iran	348	338	393	240	201	163	108	151	217	245
Kazakhistan	0	0	2	4	5	10	9	6	11	8
Kyrgyzstan	0	0	0	0	0	0	6	4	3	14
Maldives	18	9	23	23	12	17	15	18	10	14
Nepal	725	909	863	695	463	563	574	772	821	873
Pakistan	12	21	9	4	4	9	12	9	5	3
Sri Lanka	487	420	369	363	348	420	368	485	383	504
Tajikistan	0	0	0	1	5	7	2	9	1	16
Turkmenistan	0	0	0	0	0	0	3	4	1	3
Uzbekistan	-	-	1	3	8	11	9	2	5	4
Southeast Asia										
Cambodia	0	1	1	13	2	5	15	20	23	11
Indonesia	17	64	58	33	35	63	106	68	96	62
Kampuchea	4	0	0	0	0	0	0	0	0	0
Laos	3	2	7	2	2	0	0	2	7	5
Malaysia	597	1421	1130	857	75	56	37	168	148	92
Myanmar	0	0	26	11	8	10	17	32	23	27
Philippines	9	16	10	10	5	4	1	1	3	1
Singapore	14	20	6	19	2	3	7	7	4	5
Thailand	160	152	266	197	185	249	197	179	259	307
Vietnam	32	27	33	26	56	90	88	86	82	88
AUSTRALASIA (OCEANIA)										
Australia	6	10	17	12	7	7	8	9	17	21
Cook Island	0	0	0	0	0	0	0	19	0	0
Fiji	22	24	31	25	19	27	21	3	21	13
New Zealand	0	1	1	3	2	1	1	0	6	9
Papua New Guinea	0	0	0	0	0	0	1	0	0	0
Tonga	0	1	0	0	0	0	1	0	0	2
AFRICA										
Northern Africa										
Algeria	0	0	1	0	0	0	0	0	1	1
Egypt	34	36	23	18	10	8	5	4	7	3
Libya	7	9	3	3	0	4	4	2	9	4
Sudan	1657	1294	1004	450	378	350	245	299	381	301
Tunisia	0	2	0	0	0	5	0	0	0	0
Western Africa										
Burkina	0	0	0	0	0	0	1	1	0	0
Cote d'Ivoure (Ivory Coast)	0	0	2	1	1	2	0	1	0	1
Gambia	2	8	14	10	4	1	2	1	0	0
Ghana	9	4	4	3	2	11	8	11	14	6
Guinea	0	0	2	1	0	0	0	0	1	1
Liberia	1	0	0	0	0	0	0	0	15	18
Nigeria	105	84	46	33	20	19	19	25	26	23
Senegal	0	2	1	1	1	5	4	3	1	0
Sierra Leone	0	0	4	3	0	0	0	2	2	2
Eastern Africa										
Djibouti	0	0	3	3	2	4	9	10	16	9
Eritrea	0	0	8	7	12	20	7	55	79	73
Ethiopia	674	685	632	302	204	301	403	369	301	281
Kenya	3980	4268	2951	2213	1246	992	639	868	968	548
Madagascar	0	0	0	0	0	0	0	0	6	6
Malawi	0	0	4	7	1	1	1	0	0	0
Mauritius	219	296	331	442	421	459	398	309	546	550
Mozambique	0	1	8	0	0	0	0	0	0	0

niversities (1992-93 to 2001-02)

y-wise Distribution)

Country	92-93 (1)	93-94 (2)	94-95 (3)	95-96 (4)	96-97 (5)	97-98 (6)	98-99 (7)	99-00 (8)	2000-01 (9)	2001-02 (10)
Reunion	0	0	0	0	0	0	0	0	0	1
Rwanda	1	0	2	2	1	3	33	191	145	128
Seychelles	0	0	0	0	0	0	1	1	4	1
Somalia	148	132	94	40	56	48	32	88	95	143
Tanzania	50	82	328	191	99	49	38	65	71	78
Uganda	57	98	297	275	183	208	196	199	240	132
Zambia	7	4	9	7	8	12	5	5	7	7
Zimbabwe	7	6	7	7	5	7	4	4	6	10
Middle Africa										
Angola	31	7	1	1	0	0	0	1	0	0
Cameroon	0	0	0	0	0	1	0	1	1	0
Chad	0	0	1	1	0	1	0	0	0	0
Cango	0	0	0	0	0	0	3	2	2	3
Gabon	0	0	1	0	0	0	0	0	0	0
Zaire	0	3	11	1	15	5	4	6	2	4
Southern Africa										
Botswana	10	1	0	0	0	1	1	2	1	1
Lesotho	0	0	0	0	0	0	0	1	0	1
Namibia	1	1	1	1	3	1	0	4	0	1
South Africa	24	86	59	58	8	18	16	24	22	31
Swaziland	0	0	0	0	0	0	1	0	0	1
EUROPE										
Northern Europe										
Denmark	0	0	3	9	0	2	1	2	1	3
Finland	0	0	0	1	1	0	1	0	1	0
Ireland	1	0	0	0	0	0	1	0	2	1
Lithuania	0	0	0	0	0	0	1	1	1	1
Norway	0	3	2	1	1	4	6	0	3	1
Sweden	1	1	0	2	1	0	0	0	2	1
United Kingdom	49	62	45	47	27	33	26	40	51	96
Western Europe										
Austria	1	2	5	2	0	0	0	3	0	1
Belgium	4	2	1	4	1	2	3	5	2	4
France	36	35	10	12	8	13	14	18	23	49
Germany	11	18	8	8	10	10	8	7	19	19
Netherlands (Holland)	4	2	4	0	2	0	2	2	4	7
Switzerland	4	7	2	2	1	2	2	3	5	13
Eastern Europe										
Armenia	0	0	1	0	1	0	0	1	1	2
Bulgaria	7	6	5	2	3	5	2	4	9	10
Czech (Czech Republic)	0	0	3	2	2	0	2	4	2	1
Hungary	1	0	1	2	1	1	2	2	1	2
Latvia	0	0	0	0	1	0	1	0	0	0
Poland	2	5	2	5	7	6	6	8	13	7
Romania	0	0	2	3	2	6	5	5	3	1
Russia	14	21	7	6	12	42	7	10	12	10
Slovakia	0	0	0	0	0	0	0	0	1	2
Ukraine	0	0	0	0	0	0	1	0	2	2
Southern Europe										
Cyprus	1	0	0	0	0	0	0	0	0	2
Greece	5	5	3	1	0	1	3	0	4	6
Italy	6	6	2	9	3	6	4	4	13	4
Portugal	1	3	4	0	0	1	1	0	0	1
Spain	2	5	7	8	3	3	2	1	5	6
Yugoslavia	3	1	0	0	0	0	2	0	0	1
North America										
Canada	28	46	56	48	32	30	30	47	71	80
USA	106	201	362	251	129	102	87	223	246	331
Central America & Caribbean										
Mexico	1	0	0	0	0	0	3	1	3	4
Panama	0	0	0	1	0	0	0	0	1	0
Dominican Republic	0	0	1	3	1	1	0	0	0	0
St Lucia	0	0	0	0	0	0	0	0	0	1
Trinidad & Tobago	10	8	2	0	0	0	0	3	2	2
Barbados	1	0	0	5	0	3	1	1	0	0
South America										
Argentina	0	0	1	0	0	1	0	0	0	0
Brazil	1	0	0	0	1	1	0	0	1	5
Chile	0	0	0	0	0	0	0	0	0	0
Columbia	0	0	0	0	0	0	0	0	0	1
Guyana	1	2	2	0	0	2	1	0	3	5
Peru	1	1	0	0	0	0	0	0	0	0
Surinam	0	0	0	0	0	0	2	0	0	0
Venezuela	2	2	2	1	0	0	0	0	0	3
Miscellaneous*	326	254	430	699	144	234	238	512	405	734
Total	12765	13707	11888	10087	5841	6701	5323	6988	7791	8145

Note: i) The figures could be a little higher as a few universities have not submitted information.
ii) Miscellaneous* : Includes students who have been indicated by responding universities as representing Palestine, Gazastrip, PLO and Tibet, etc.

Compiled by Dr. Veena Bhalla, Under Secretary, Association of Indian Universities, New Delhi 110 002.

(Contd. from page 17)

The resource persons who interacted with the participants included Prof. Sagar Sharma, Prof. Balkrishan Bali, Prof. Graish Jaswal, Prof. Tej Vir Singh, Prof. J B Nadda, Prof. P C Kapoor, Prof. Prem Kumar, Prof. M M Goel, Sh. Rajinder Singh, HAS(Industry), Dr. H Bansal, Prof. Meenakshi Malhotra, Sh. R C Satija, Sh. I D Bhandari, IPS, Prof. Suresh Kumar, Prof. H S Parmar, Prof. Yoginder Verma, Dr. Kulwant Pathania, Prof. A K Vashist, Prof. R K Gupta, Prof. M K Sharma and Prof. I P Massey. Dr. Kiran Rekh, Assistant Director, Academic Staff College, H P University, Shimla proposed a vote of thanks.

National Workshop on Curriculum Development

Natural products have played an important role in the process of drug discovery. Plants have formed basis of traditional systems of medicine the world over. Approximately 80 per cent of world population relies mainly on traditional medicines and the rest 20 per cent also uses these plant products in health care. About thirty per cent of the currently used drugs are of natural origin. Despite the significant role of natural products in drug development, there has been a decline in interest in natural products chemistry. In part, this may be ascribed to a curriculum which offers very little to create interest at bachelor and postgraduate level. The term pharmacognosy has come to be interpreted, in pharmacy institutions in India, as botanical studies on plants or crude drugs. However, it is to be stressed that it is an interdisciplinary investigation of biologically active substances in nature derived from plants and animals and should include marine organisms and micro-organisms. It involves the subjects of botany and taxonomy, chemistry, pharmacology, molecular biology and biotechnology. It has been generally realized in the past few years that students entering their post-graduate program in Natural Products have little understanding of the underlying chemistry. Their knowledge about the techniques used in natural products chemistry leaves much room for improvement. Keeping these facts in view the National Institute of Pharmaceutical Education and Research (NIPER), is organizing a three-day Workshop on 'Curriculum Development in Natural Products of Postgraduate Level' from November 25—27, 2003. The Workshop is intended to introduce the latest trends and practices in this field so that interest is generated in the faculty and students.

Main highlights of the Workshop will be discussions on the natural products curriculum of M.Pharm. and M.Sc Chemistry (natural products course); extensive coverage of recent trends in the field of natural products and quality control aspects of herbal products; exposure to state-of-the art infrastructure for research; lectures to be delivered by the experts in the respective fields, from research organizations and academia; opportunity for face to face interaction and panel discussion; extensive course material to be provided to the participants. Some of the topics for deliberations are:

- Significance of natural products in drug discovery programmes;
- An overview of curriculum in natural products in India;
- Introduction to natural products of microbial, fungal and marine origin; examples of natural products and their derivatives that are marketed as drugs, examples include natural products from the chemical categories of steroids, terpenoids, proteins, polypeptides and polysaccharides used as drugs in different therapeutic areas;
- Structure and function of bio-molecules such as proteins, polysaccharides and lipids.
- Biosynthetic pathways leading to various classes of secondary metabolites. Biosynthetic investigation methods, which include tracer techniques. Investigations on the regulation of simpler pathways where limited number of enzymes are involved.
- Selected classes of the secondary metabolite containing drugs with structure elucidation of main constituents by chemical methods and their SAR studies.
- Recent trends in separation technology for natural products.
- Recent development in spectroscopic techniques such as NMR, two-dimensional NMR experiments like COSY, HMQC, HSQC, NOE, NOESY and HMBC and mass spectrometry used for structure elucidation of complex natural products.

Faculty in the Pharmacy Colleges who are engaged in teaching Natural Products Chemistry/ Pharmacognosy to M.Pharm students, faculty in the universities teaching Natural Products Chemistry to M.Sc students, Post Doctoral and Doctoral students who may choose academics as a career may participate in the Workshop. Participation is also sought from the research institutions that are engaged in natural products and related research programmes. For further details contact National Institute of Pharmaceutical Education and Research, Minister of Chemicals and Fertilizers, Sector 67, S.A.S. Nagar - 160 062, Punjab. Phone 91-172-214682 - 214687 Fax 91 -172 - 214692. E-mail: dean@niper.ac.in. Internet : http:niper.ac.in

Seminar on Emerging Service Sector

A one-day Seminar on 'The Emerging Service Sector in India: Shifting Paradigms' was organized recently by the Department of Management Studies, Jamia Hamdard, New Delhi in collaboration with HT Careers. Chief Guest of the function was Mr. Zubair Ahmad, Managing Director, Gillette India.Prof. N K Jain, Head, Department of Management Studies, Jamia Hamdard in his welcome speech threw light on importance of service sector and the prodigious growth in the service sector. He further emphasized on the various factors leading to the shift in service sector via demographic changes, global exposure and technological changes.The Chief Guest in his speech said that the factors like innovation, continuous changes and adapting the changes are essential in these shifting paradigms. He further asserted that three major contemporary changes are globalization of economy, flattening economic growth and extremely knowledgeable and demanding consumers, which are pertinent and relevant and are independent of the industry. He reiterated that innovation being the name of the game, product or service should be unique, satisfying the consumer needs and in accordance with the habits of the customer. The address was followed by the question answer session, where participants from different Business Schools interacted with the Chief Guest.

Mr. Siraj Hussain, Vice Chancellor, Jamia Hamdard in his presidential address illustrated the importance of service sector. The Seminar comprised of three technical sessions where eminent personalities from the different sectors shared their views and experiences with the participants. The technical session on Challenges in Service Industry: Designing Effective Competitive Strategies was chaired by Prof. Gautam Bhattacharya, IILM and the speakers were Mr. Debasis Choudhury, Head, IT, Price Water House Coopers and Mrs. Malathi Mohan, AGM, PNB. Prof. S. Neelamegham chaired the technical session on Customer Orientation and the Service Industry: A framework for Synergistic Opportunities and the speakers of the session were Mr. Alok Kumar, VP CRM, Bharat Telesonic; Mr. Pooran Chandra Pandey, ASG(Research) FHRAI; and Mr. Naushad Alam, Manager UTI Bank. The technical session on Brand Building in Services was chaired by Prof. M M Anand and the speakers were Mr. Sanjeeb Bhikchandani, CEO, Naukri.com; Mr. Anup Chawhan , BDM, AFL Pvt. Ltd. The seminar ended with the Business Quiz anchored by Prof. Gautam Bhattacharya. Vote of thanks was proposed by Ms. Rakshinda Siraj, Lecturer, Department of Management Studies.

Silver Jubilee Celebrations at NU School of Agriculture Sciences

The School of Agricultural Sciences and Rural Development, Nagaland University (erstwhile College of Agriculture, NEHU) has completed 25 years of its establishment. As a part of its Silver Jubilee celebrations it is organizing some special programmes from 17th to 20th Oct, 2003 at Medziphema, Nagaland. Alumni Association of the school is organizing Alumni Night as well as Football Match on 19th Oct. 2003. For further details contact Dr. Akali Sema, General Secretary, Alumni Association, Ph: 03862-247212 (O), 03862-244295 ®; Fax: 03862-247113, E-mail: akali-chishi@yahoo.co.in

NAAC - NCTE Tie-up

Realizing the need for quality assurance of Teacher Education and mechanisms for enhancing accountability and quality in institutions recognized by National Council for Teacher Education (NCTE), the NCTE has entered into a memorandum of understanding with National Assessment and Accreditation Council (NAAC) on September 16, 2002. Through this NCTE and NAAC will participate in ensuring the quality of Teacher Education Institutions in the country through the process of Assessment and Accreditation.

As the process of Assessment and Accreditation started gaining credibility, NCTE has decided to link the whole process with recognition of Teacher Education Institutions especially with relation to the policies on extension and enhancement of intake of Teacher Education Institutions. The decision of the NCTE has been put forth in the form of regulation entitled 'The NCTE (Form of application for recognition, the time limit of submission of application, determination of norms and standards for recognition of teacher education programmes and permission to start new course or training) (Second Amendment', Regulations, 2003)'. The regulations have come into effect from August 21, 2003, i.e., the date-of publication in the official gazette. The clause 4 of para 8 of the aforesaid NCTE regulation reads as:

No institution shall be permitted to apply for enhancement of its intake over and above the basic unit as indicated in the Appendices 3 to 14 of these regulations and for starting a new course or training in teacher education under subsection (1) of Section 15 of NCTE Act, 1993 unless.

a) it has been granted permanent recognition and has continuously run teacher training programmes or course for a period of three years; and *b) it has accredited itself with the National Assessment and Accreditation Council (NAAC) with a grade of B+ on a nine point scale developed by NAAC.*

Provided that this shall not apply in respect of enhancement of intake in elementary teacher training institutions and for starting a course or training in elementary teacher education."

Lecture on HIV/AIDS

A Lecture on 'Mother to Child Transmission of HIV/AIDS' was organized recently by the Jamia Hamdard, New Delhi as a part of its NSS programmes. Dr. Deepti Dayanand Dongaonkar, Professor of Obstetrics and Gynaecology, Grant Medical College, Mumbai delivered the lecture. Before beginning her deliberations she paid homage to late Hakim Sb, Founder of the University. Revealing the details of the HIV/AIDS, Dr. Dongaonkar said that over 42 million people are suffering globally from the deadly virus. Of these, 50% are women while 90% belong to the developing countries. A substantial number of the affected ones are from the sub-Sahara Africa and South East Asia including India, Pakistan and Bangladesh. Showing her worry for the increasing mother to child transmission of AIDS in India at an alarming rate she said that the disease should be prevented before it becomes monster and we can substantially prevent it if we try sincerely. She said that one should take all measures to prevent women from becoming HIV positive. "In spite of that if any woman gets attacked by the disease, good treatment through effective drugs and proper care and support should given during pregnancy to the affected women," she said. She stressed a greater role and responsibility of husbands in curbing the fatal disease.

She participated in discussion after lecture with large number of students and teachers and answered all their questions. The program was organized by NSS Coordinator, Dr. S M Ali and a vote of thanks was proposed by Dr. Khursheed Ahmad

Fortnightly Seminar Series at NEHU

North Eastern Hill University, (NEHU) Tura Campus, Shillong is currently organising a Fortnightly Seminar Series. Mr. P A Sangma M P attended one of the recent seminars of the series and presented a paper on 'Vision of North-East 2020'. Delivering the welcome address Prof. S Ganguly explained the aims and objectives of the Forum and looked forward to the creation of a combined effort between the people and the politicians to make the vision of 2020 be transformed from the realms of a dream to that of reality. Mr. Sangma spoke about the obstacles in the path of development and listed them as:

- Inter-tribal conflict
- Ego and Emotions of the people of North-East
- Lack of Vision

He said that unless the North-East overcome these bottlenecks social, economical, political and intellectual development is not possible and North-East Region will be left behind from main stream. He said that those areas sharing the international border with China, Bangladesh, Myanmar, Nepal and Bhutan should go for free trade to generate economy." The economy of these states are badly affected due to geographical isolation, lack of infrastructure etc," he said.

"The world has become global village due to the information technology revolution and the masses should move with the technology otherwise the technology will throw them out," he said. He emphasized the need to create own Regional Economy Zone, to give away inter-tribal conflict and think about the North-East Regional economy to be fulfilled within 2020. There can not be integrated economy without participation of neighboring states and a free market open market has to be opened for all out economic development of their region. He suggested that the time has come when one has to look towards east not west.

He said that unless there is infrastructual development and connectivity (physical connectivity), science and technology connectivity, information technology connectivity, studies of science, mathematics and technical courses, the north-east region may not come at par with national main stream. He suggested that for human resource development university center should work as think tank and start the courses which can generate technical manpower. He envisaged that proper planning should be there and we must think of some products which can be marketed for better economy. He opined that the economic power is the power which can sustain all the shocks. He stressed upon learning of Hindi which according to him is very essential to connect all the Indians with the main stream.

In Chairman's remarks Prof. S S Khare highlighted the important issues raised by Mr. P A Sangma and endorsed the views. He emphasized that proper education of the people of North-East Region is to be given top priority, which may pave the way for better North-East region in 2020. Mr. R S Thakur, Coordinator, Fortnightly Seminar Series proposed a vote of thanks.

Training Course in VLSI Design

Institute of Technology, Guru Ghasidas University, Bilaspur, Chhattisgarh recently organized a ten-day Certificate Training Programme in VLSI Design in association with Bit Mapper Integration Tech. Ltd., Pune. The Programme was conducted by Electronics and Communication Department. The main purpose of the Training Programme was to give knowledge of the latest technology, which is catching up the Indian market and also to prepare the students for the forthcoming challenges in the field of electronics. Nearly 40 students of final and pre-final year participated in this programme. Training was through power point presentation. Required EDA tools (software) and VLSI demo boards for implementation were provided by the company for the course. Tools used by company were Xilinx web pack, Model Sim XE, VLSI Trainers for Xilinx series of FPGA's and CPLD's.

The training contained an introduction to VLSI, which included basics of VLSI, different tools venders, introduction to HDL and Design flow. The knowledge of VHDL was given which included language elements like entity, architecture, configuration, concurrent/sequential concepts, subprograms and packages. Behavioral modeling in VHDL included writing test benches and behavioral models. Fundamentals of simulation and concept of delays were taught. Students were given full knowledge of programmable logic device architecture, which included types of programmable logic, types of available devices, fast flash technology and introduction to ISP and IRL. Overview of Xilinx devices 9500 series of CPLD's which included architecture of function blocks, macrocell, power reduction mode global clock and clock set/reset, pin locking features, timing model diagram and application of CPLDs were highlighted. Students were exposed to FPGA architecture which included basic building blocks, CLB, function generator, IOB's, Programmable Switch matrix and power distribution in FPGA. Key differences between CPLD and FPGA were highlighted. The other aspects covered were synthesis issues which included introduction, simulation Vs synthesis, synthesis design flow, synthesis process, advantage, tools, optimizations, synchronous and asynchronous reset and hardware modeling examples.

Designing of digital gates, decoder, multiplexer, comparator, counters parity generator etc. were covered using different platforms like xilinx schematic editor, concurrent constructs, sequential constructs and structural modeling. Modeling of TTL circuits included designing of up/down counters and different types of tristate latch buffer. The students were given projects like designing of a universal flip-flop etc. The designing was done using VHDL language and its implementation was done on CPLD & FPGA trainer kits. Mrs. Anita Khanna, Lecturer, coordinated the Training Programme.

Extension Lecture on ILA

An Extension Lecture on the topic 'Role, Activity and Contribution of Indian Library Association towards Professionalism and Parity with Teachers in India and their Future Plan' was organized by Indian Library Association, New Delhi in collaboration with Maharshi Dayanand University, Rohtak recently. Dr. Ajit Singh Siwatch, Librarian, Maharshi Dayanand University, Rohtak was the Organising Secretary of the Lecture and Sh. D V Singh, General Secretary, Indian Library Association and Librarian, Shri Ram College of Commerce, Delhi was the speaker. More than hundred delegates from all over Haryana, Chandigarh, Delhi, U.P. and Punjab actively participated in the lecture. Dr. Ajt Singh Siwatch in his welcome address highlighted the historical development and achievement of Indian Library Association.

Sh. D V Singh explained in detail about the role and activities of Indian library Association and highlighted the burning aspects of parity of library professionals with teachers in India. He emphasized to develop the attitude of the library professionals to face the new challenges in this IT era. Vote of thanks was proposed by Dr. K C Dabas, Assistant Librarian, IMSAR. Library, M D University, Rohtak.

Post Doctoral Fellowships at IUCAA

The Inter-University Centre for Astronomy and Astrophysics (IUCAA) is an autonomous institution under the University Grants Commission. It was set up in December 1988 amidst the surroundings of the University of Pune. IUCAA has an integrated campus which includes the academic facilities and is a center of excellence within the university sector for teaching, research and development in astronomy and astrophysics. The center at present consists of about 35 academic members, including core faculty, post-doctoral fellows and graduate students, with potential for growth in the numbers. IUCAA has a visitor programme, involving short and long term visits of scientists from India and abroad. The center has about 90 visiting associates from universities and colleges, who visit periodically and participate in all its activities.

Facilities at IUCAA include a network of state-of-the-art computers, high speed internet connections, mirror sites of important databases like ADS and VIZIER, a very well equipped instrumentation laboratory and a library with collection of books and periodicals. A 2 m optical telescope is being set up by IUCAA at a site which is about 100 kms from the IUCAA campus. The telescope will be operational towards the end of 2003. Research Areas covered by faculty members at IUCAA include:

- Classical and quantum gravity
- Cosmology and large scale structure
- Cosmic magnetic fields
- Gravitational waves
- Galactic and extragalactic astronomy
- High energy astrophysics
- Instrumentation for astronomy
- Interstellar medium
- Radio astronomy
- Solar system and stellar physics
- Virtual Observatory

IUCAA has an observational programme in several areas. Support is available for guest observing from international facilities. Other academic activities include a graduate school for Ph.D students, teaching at the master's level for students from University of Pune and other universities, schools and workshops, refresher courses for university and college teachers and a public outreach programme.

As a part of its activities of 2003, it is offering Post Doctoral Fellowships at IUCAA, for durations which are flexible within a range of one to five years. The Fellowship includes a remuneration, contingency grant, accommodation on the campus and medical benefits. Facilities required for research are provided through the general IUCAA budget. Post-doctoral fellows with excellent performance may be considered for a tenured position. Interested candidates may send a curriculum vitae and list of publications and arrange for three confidential references by November 25, 2003. For further details contact Coordinator, Core Programmes, IUCAA, Inter-University Centre for Astronomy and Astrophysics (An Autonomous Institution of the University Grants Commission), Post Bag 4, Ganeshkhind, Pune 411 007, India. Email: vch@iucaa.emet.in Tel. 91-20-5691414, 5699415. Fax: 91-20-5690760. E-mail: root@iucaa.emet.in. URL: http://www.iucaa.emet.in/

News From Agricultural Universities

ICAR Summer School

A three-week ICAR Summer School on 'Advanced Diagnostic Techniques and Therapeutic Approaches to Metabolic and Deficiency Diseases in Dairy Animals' was held at the Medicine Division, Indian Veterinary Research Institute, Izatnagar recently. It was attended by 20 participants from different ICAR Institutes and Veterinary colleges representing 12 states.

Dr. A K Singh, Director, Department of Animal Husbandry, UP was the Chief Guest of the occasion. In his address he told that there was an urgent need to train field veterinarians in optimum number to diagnose disease at the earliest for their prompt and effective remedy. There was a paucity of such sort of trained field veterinarians, as a result of which, on several occasions, animals are treated bereft of proper diagnosis. At times, this might be hazardous for suffering animals. Dr. Singh informed that though there was a decline in respect of agricultural contribution in the gross domestic product of the nation, the animal husbandry contribution in the agricultural GDP was increasing. He further said that Uttar Pradesh government has been allocated rupees 10 crores by Ministry of Agriculture, Government of India for infertility control in animals. Guest of honour, Dr. R S Sharma, in his address, talked of the enormous importance of medicine in combating and controlling diseases affecting animals.

On the occasion, Dr. M P Yadav, Director, IVRI dealt with the significant work being carried out in the sphere of livestock in India. He reminded the scientific gathering of the role of the IVRI in livestock development. He added that deadly diseases like Rinderpest, African Horse Sickness, Cattle Plague, etc. have been controlled. Dr. Yadav also informed the gathering that Rs. 200 crore has been allocated by the Central Government for Foot and Mouth Disease Free Zones in the Xth plan. Course Director and Head, Division of Medicine, Dr. D Swarup outlined the details of the Summer School including 48 lectures and 12 practical.

National Symposium on University Autonomy

The Indian Agricultural Universities Association (IAUA) is a Forum to take up meaningful dialogue on the matters of national importance in the field of agriculture and rural development with the concerned agencies on a regular basis. It also provides support to organize seminars, conferences and symposia on key issues related to agriculture and allied areas. The Forum consists of Vice Chancellors of State Agricultural Universities; Directors of ICAR Institutes functioning as Deemed Universities; Vice Chancellor of Central Agricultural University, Imphal; Vice Chancellor of Allahabad Agriculture Institute and about 16 Senior Officers of ICAR and associated organizations.

In the wake of economic liberalization initiated by GOI, the General Agreement on Trade in Service (GATS) as part of WTO, revolutionary changes taking place in information technology, shift in domestic economic policies etc. have thrown a lot of challenges on the existing agricultural education system in the country to set direction to our agricultural education system. Keeping this in view IAUA has attempted to organize a National Symposium on 'University Autonomy and Quality Improvement of Higher Education'. The Maharana Pratap University of Agriculture & Technology, Udaipur is hosting the symposium. The sub-themes of the symposium are:

- Status of Agricultural Education in India;
- University Autonomy-Concepts and issues;
- Challenges and Opportunities of Higher Education Vis-à-vis Teaching, Research and Extension Education;
- Excellence and Quality Assurance in Higher Education; and
- Agricultural Education in the context of Globalisation.

For further details contact Dr. R P Singh, 1G-2,C.G.I.A.R. Block, National Agricultural Sciences Complex(N.A.S.C.), Dev Prakash Shastri Marg, Pusa Campus, New Delhi - 12. Fax & Tel. (O) 011-25842422; (R) 011-25834154. Mobile No. 9811 930811; e-mail: esiaua@yahoo.co.in/drsinghrp@rediff.com or Dr. A N Mathur, Dean, College of Technology and Engineering, MPUAT, Udaipur-313 001 (Rajasthan). Tel: Office(0294) 2470837, Resi.(0294)2470809. Mobile: 94141-55810 Fax: (0294) 2471056. e-mail: anmathur45@hotmail.com.

AIU News

West Bengal Vice Chancellors' Meet

An Informal Meeting was conducted recently by Prof. Dayanand Dongaonkar, Secretary General, Association of Indian Universities at Netaji Subhas Open University, Kolkata in which the Vice Chancellors and Registrar of the Universities located in West Bengal were invited to discuss various issues related to higher education in general and functioning of universities in particular. Almost all the universities of the State were represented in the meeting and there was an extensive discussion on academic and extra-curricular matters. Special emphasis was laid on student counselling during admissions. Regarding the role of AIU, all the Vice Chancellors opined that it should become more aggressive in preparing educational policies. While discussing about the extra curricular activities, many of the Vice Chancellors suggested that they need better infrastructure for sports at university level. It was also suggested that the sports teachers be trained in First Aid Management. Pointing at the trend of specialization of higher education and the demand for special institutions it was suggested to have special universities in the State for professional studies like health sciences, technology etc.

Some of the burning issues like internationalization and globalization were also discussed in the meeting. In the discussion the Secretary General pointed out that though we are in the era of internationalization, very few universities are availing the advantage of this for taking education across the border. Showing his concern towards the fact he said, "organized efforts are needed for the cause". He suggested the Vice Chancellors to attend the international education fairs more regularly.

All the participating Vice Chancellors appreciated the meeting. There was a general perception that such kind of informal meetings provide a good platform for discussion and therefore should be organized more frequently. ❑

Developing of Creative Reading

An author gives us the world, through the medium of words, as it has come to him through his senses and as processed by his brain. Words which, in turn the culture, has given him have both enlarged and limited his awareness of environment. Almost every one of us remembers a time when he was a child, and an adult took his hand and said 'let us take a walk'. Do you remember what you said as soon as you could speak? Where are we going? A good reader, as. he agrees to go along with the author, asks such questions, anticipated a turn at the next corner, a branching of goals and a decision. He sees things the author misses in his logic or in his selection of ideas to present. He learns the preferences of the author by the length of time he dwells on a topic and finally having read a chapter or the book arrives at his own conclusions and judgments.

The act of reading has more to do with thinking in general than with reacting to print alone. Learning to read is essentially a matter of learning to perceive the potential meaning in written messages and then relating the perceived potential meaning to cognitive structure so as to comprehend it. Thus, it is essentially a thoughtful process. However to say that reading is a 'thought getting' process is to give it a too narrow description. It should be developed as a complex organization of patterns of higher mental processes. The reading programme should therefore make careful provision for contributing as fully as possible to the cultivation of a whole array of techniques involved in understanding, thinking, imagining and evaluating.

Not only does academic success depend upon critical reading proficiency, but our national welfare demands a citizenry capable of purposeful, thoughtful interpretation of ideas of others. It is not an overstatement to say that survival of a democratic society is vitally linked to a people capable of making wise choices through critical analysis. But it is surprising to note that a great majority of people read to talk, many read to write and a microscopic minority read to think. Emerson was probably correct in his assessment that "few know how to read. Women read to find a hero whom they can love; men for amusement; editors for something to crib; authors for something that supports their views; and hardly one reads comprehensively and wisely."

Unfortunately, no deliberate attempt is made in our schools and colleges to develop and promote the skills of creative reading in the students. Like computers they accumulate and tabulate facts from the printed page without significantly reacting to or reflecting upon them. Man is much more than a mechanical machine. He is blessed with a thinking head on his shoulders to elicit maximum meaning from what is read. He has the capacity to think about thinking of his own as well as that of others. In the words of Norman Friedman "nothing is more dangerous than the man who says that he has no position, no point of view, no theory...." Such a merely well informed man is surely the most useless bore on God's earth in Whitehead's words.

Knowledge is not what we gather from the printed page. Nor is it only a matter of perception. Knowledge, in true sense of the term, is both conception and interpretation. It is the result of the creative acts of man's mind that he attempts to see and establish relationships. In order to attain this level of knowledge one must read creatively. In view of the unprecedented explosion of information and unprecedented growth of printed matter, reading instruction for the modern world cannot be restricted to 'word recognition' or 'literal comprehension'. Helen M. Robinson proposes that the student must be equipped "to judge the veracity, validity, or worth of what is read, based on sound criteria or standards developed through previous experiences". He must be enabled to read between and beyond the lines.

An examination of literature will reveal that creative reading is placed at the highest level in a hierarchy of reading comprehension skills. The hierarchy includes an inextricably involved continuum of psycho-socio-linguistic skills which range from literal comprehension, interpretative or inferential comprehension, to evaluating the quality, the value, the accuracy and the truthfulness of what is read. David H Russell suggests four main varieties of creative reading: finding meanings implied by the author; inferring beyond the facts stated or the intent of the author; appreciative reactions such as enjoying beauty or responding to imagery; and critical evaluations. Similarly an expert on creativity and a leading educational psychologist Dr E Paul Torrance wants the creative reader to do something with what is read at four levels: reproducing imaginatively what is read; elaborating what is read; rearranging and transforming what is read; and going beyond what is read. He further elucidates that the creative reader must be open to his experiences, must reflect upon what he reads, discover relationships among ideas, react to new concepts, play with the possibility that the new idea might be correct and try to imagine what its consequences might be. In fact, these skills form the part of divergent thinking and exhibit creative behavior.

Melvin Howards of North Eastern University is somewhat unconventional in his explanation of the act of creative reading. He does not consider creative reading merely as a set of skills offered in some predetermined order, nor is it confined to junior and senior high levels. Most university students who have trouble staying in the school, irrespective of their major field, lack critical reading skills. They have learned too well, in grade one, that one focuses on specific skills, specific formation, and facts and that one never gets to the overall, the *gestalt* view of what an author is saying.

Poetry is a joy for those who can share, through the poets' words and images, or who can re-create in themselves the sensory realm and the intellectual realm of the author. If one reads poetry or any great literature as an exercise in vocabulary and definition, one has missed the whole point. Such persons and these appear to be many, do not like to read much; and when they do read, they are most likely to be literal in their understanding of what has been said and why it has been said. "It is like believing you are living in the reflection of a TV set or believing you are living a human experience by saying words quietly to yourself as you look at a book".

Thus we should look at creative reading from 'gestalt' point of view. That the whole is greater than the sum of its parts in the area of creative reading. Creative reading is an organic whole of values, beliefs, information, feelings, thinking and conditions. At any level, it requires the total participation of a whole person in a total environment. Creative reading is the way we use words as windows through which the reader begins to see into the author and his world, beyond his words. His is the way the reader begins to see into himself and his realm of life experiences. Creative reading is a blend and balance of the verbal and nonverbal, cognitive and affective aspects for it should be the total immersion of the reader in what is being read.

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INVITATION TO AUTHORS

Authors are invited to contribute articles on contemporary issues in higher education in general and Indian higher education in particular for publication in the 'University News'. The articles may be sent as an e-mail attachment in MS WORD to : *aiu@del2.vsnl.net.in* or printed / typed copy in duplicate along with floppy by post at the following address :

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THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities (Notifications received in AIU during July - August, 2003)

AGRICULTURAL & VETERINARY SCIENCES

Entomology

1. Mandal, Sunil Kumar. **Management of key insect pests *in summer sown okra. Abelmoschus esculentus L. Moench.*** Department of Entomology, Rajendra Agricultural University, Pusa, Samastipur.

Floriculture

1. Balbir Singh. **Induction of genetic variability in chrysanthemum through mutagenesis.** (Dr Y D Sharma), Department of Floriculture, Dr Yashwant Singh Parmar University of Horticulture and Forestry, Solan.

Plant Breeding

1. Siddiqui, Mohammed Asadullah. **Heterosis, inbreeding depression and combining ability in diploid cotton (Gossyplum arboreum L.).** (Dr L A Deshpande), Department of Plant Breeding. Marathwada Agricultural University, Parbhani.

BIOLOGICAL SCIENCES

Biology

1. Anderson Paul, K. **Production and characterisation of transgenic brassica oleracea carrying endotoxin genes of bacillus thuringiensis.** (Dr P Pardha Saradhi and Dr P Ananda Kumar), Department of Biological Sciences, Jamia Millia Islamia, New Delhi

2. Haque, Md Mahfuzul. **Elucidation of the mechanism of energy transduction by membrane AT pases.** (Prof M Amin, Dr Ejaz Husain and Dr Luqman Ahmad), Department of Biological Sciences, Jamia Millia Islamia, New Delhi

3. Khan, Nilofar. **Electrophysiological setermination of the optimal concentration of nitrogen, phosphorus and potassium (NPP) for the growth of selected crop plants.** (Prof M Amin and Dr Ejaz Hussain), Department of Biological Sciences, Jamia Millia Islamia, New Delhi.

4. Ray, Amitabha. **Study on c-erbB-2 oncoprotein immuno expression, EGF-R and other oestrogen related factors in breast cancer.** (Dr Syed Akhtar Husain), Department of Biological Sciences, Jamia Millia Islamia, New Delhi

5. Safdar Jawaid. **Screening, isolation and identification of marine bacteria for agarase activity and characterisation of agarase from a selected strain.** (Dr Tasneem Fatma and Dr G S Khetri), Department of Biological Sciences, Jamia Millia Islamia, New Delhi

6. Singh, Badri Nath. **Molecular cloning and characterisation of topoisomerase II gene from tobacco.** (Prof Arif Ali and Dr M K Reddy), Department of Biological Sciences, Jamia Millia Islamia, New Delhi.

7. Zahida Qamri. **Molecular characterisation of the Indian isolates of enteropathogenic escherichia coli (EPEC) causing epidemic diarrhoea.** (Prof Arif Ali), Department of Biological Sciences, Jamia Millia Islamia, New Delhi

Biotechnology

1. Hassan, Qazi Parvaiz. **Development of a recombinant organiser for production of 2-keto-l-fulonic acid.** (Dr L A Khan), Department of Biotechnology, Jamia Millia Islamia, New Delhi

2. *Mohammad Zafrullah.* ***Structural and functional* studies on the ORF2 and ORF3 of natural sciences proteins of hepatitis E-virus.** (Prof E Ahmad), Department of Biological Sciences, Jamia Millia Islamia, New Delhi

Botany

1. Arya, Namita. **Influence of triazole derivatives on uptake and toxicity of cadimium, zinc and lead of cucumis sativus (L) and Brassica oleracea Var. Capitata (L).** (Dr V P Singh), Department of Botany, Vikram University, Ujjain.

2. Chavan, Ravi Satrajit. **Mycoflora of Dharwad District.** (Dr Ch Ramesh), Department of Botany, Gulbarga University, Gulbarga.

3. Dabegaonkar, Rajesh Rambhau. **Investigation of Fossil Flora from the Deccan intertrappean beds of Chhindwara, M P and Yavatmal, M S District.** (Dr M T Shaikh and Dr D K Kapgate), Department of Botany, Nagpur University, Nagpur

4. Deshmukh, Devikant Amrutrao. **Studies on some fruit vegetables under the influence of growth hormones and fertilizers in Nanded District.** (Dr Dakore H G), Department of Botany, Swami Ramanand Teerth Marathwada University, Nanded

5. George, Mini M. **Studis on micropropagation and secondary metabolite production in some important plants.** Department of Botany, Maharaja Sayajirao University of Baroda, Vadodara.

6. Joseph, Mariamma. **Studies of the Chemistry and toxonomy of some Indian members of the piperaceae.** Department of Botany, Maharaja Sayajirao University of Baroda Vadodara

7. Komal Kaushal. **Embryological studies in some grasses of Chandigarh and adjacent hills.** (Dr R K Bhanwra and Prof M I Sharma), Department of Botany, Panjab University, Chandigarh

8. Mitra, Pankaj. **Chemical induction of resistance in soybean plants to sclerotium rolfsii sacc.** (Prof A K Chaudhury and Prof B N Chakraborty), Department of Botany, University of North Bengal, Raja Rammohunpur, Distt Darjeeling

9. Nagadhara, D. **Genetic transformation and production of transgenic indica rice plants resistant to sap sucking insects pests.** (Dr K Venkateswara Rao), Department of Genetics, Osmania University, Hyderabad

10. Nivanonee, Chingakham. **Vegetational structure and primary production of the madrophytes in Ikop Lake, Manipur.** (Dr B Manihar Sharma), Department of Botany, Manipur University, Imphal

11. Padmavathi, U V R. **Morphology, embryology, pharmacognosy and tissue cultural studies of the genus Gmelina L. (Indian species).** (Dr M R S Sulochana), Department of Botany, Osmania University, Hyderabad

12. Ramarao Naidu, B V A. **Ethnomedicine from Srikakulam District, Andhra Pradesh, India.** (Prof T V V Seetharami Reddy), Department of Botany, Andhra University, Waltair

13. Ramesh, S. **Production of transgenic rice plants resistant to lepidopteran pests.** (Dr K Venkateswara Rao), Department of Genetics, Osmania University, Hyderabad

14. Rana, Kiran. **Lichens of Himachal Pradesh: A floristic study.** (Dr M P Sharma and Prof S P Khullar), Department of Botany, Panjab Univesity, Chandigarh

15. Salunke, Vijaykumar Desai. **Physiological studies in relation to grain mold resistance in sorghum.** (Dr U K Talde), Department of Botany, Swami Ramanand Teerth Marathwada University, Nanded

16. Singh, Aneesha Harikrishna Singh. **Morphogenetic studies in halophytes.** (Dr Jitendra Chikara), Department of Botany, Bhavnagar University, Bhavnagar

17. Sureshkumar Singh, Sorokhaibam. **Studies on microbial communities and their activities in degraded and undegraded forest soils of Arunachal Pradesh.** (Dr M S Dkhar and Dr S C Tiwari), Department of Botany, North Eastern Hill University, Shillong.

18. Upadhaya, Krishna. **Studies on plant biodiversity and ecosystem function in sacred groves of Meghalaya.** (Prof H N Pandey), Department of Botany, North Eastern Hill University, Shillong.

Life Sciences

1. Bebika Devi, Chandam. **Variations in species distribution and primary production of the macrophytes in Sanapat Lake, Manipur.** (Prof B Manihar Sharma), Department of Life Sciences, Manipur University, Imphal.

2. Jiten Singh, Hemam. **Bio-ecology of aphis cracelvora Koch (Homoptera:Aphididae) on certain pulse crops in Manipur.** (Prof T Kameshwar Singh), Department of Life Sciences, Manipur University, Imphal.

3. Shantibala, Tourangbam. **Studies on bio-ecology and management of the pod borer, lampides boeticus (Linnaeus) (Lepidopter: Lycaenidae) in Manipur.** (Prof T Kameshwar Singh), Department of Life Sciences, Manipur University, Imphal.

4. Susheela Devi, Khumukcham. **Shelf-life improvement in Ananas comosus (L.) Merr. by gamma irradiation.** (Prof G Jitendra Sharma), Department of Life Sciences, Manipur University, Imphal

Microbiology

1. Babji, Jujjavarapu. **Studies on the chitinolytic activity of bacillus thuringiensis var neoleonensis B2M: Its role in entomocidal and in biocontrol of phytopathogenic fungi.** (Prof Padma Sridhar), Department of Microbiology, Osmania University, Hyderabad

2. Kota, Krishna Prasad. **Solid state cultivation of Streptomyces clavuligerus for cephamycin C production.** (Prof Padma Sridhar), Department of Microbiology, Osmania University, Hyderabad

3. *Patel, Anand Harivadan.* **Studies on *Enterobacter aerogenes* as a phosphate solubilizer in soil.** (Dr H H Patel), Department of Microbiology, Bhavnagar University, Bhavnagar

Zoology

1. Ghosh, Chaitali. **Studies on the genetic basis of *fenitrothion resistance and comparative susceptibility of* anopheles stephensi, Lisston to rodent malaria parasite.** (Dr N J Shetty), Department of Zoology, Bangalore University, Bangalore

2. Gupta, Sunita Nityanand. **Effect of depot medroxy progesterone acetate (Depo Provera) and sustanon on the male reproductive organs of Indian palm squirrel funambulus pennanti (Wroughton).** (Dr M S Sastry), Department of Zoology, Nagpur University, Nagpur.

3. Huria, Monika. **Studies on culture possible use as fish food and impact assessment of soil pollutants on *earthworms*.** *(Dr K V Sastry), Department of Zoology, Maharshi* Dayanand University, Rohtak

4. Kar, Pradip Kumar. **An in vitro study on the efficacy of some putative anthelmintic plants against the trematode parasite, fasciolopsis Buski.** (Prof V Tandon), Department of Zoology, North Eastern Hill University, Shillong.

5. Moza, Beenu. **Thermodynamic and conformational studies of the molten globule state of horse cytochrome-C.** (Dr Faizan Ahmad), Department of Biological Sciences, Jamia Millia Islamia, New Delhi.

6. Nagabhushana. **Studies on the bio diversity of *drosophilids in Devarayanadurga, Tumkur District.*** *(Dr V* Vasudev), Department of Zoology, Kuvempu University, Shimoga

7. Singh, Rakesh Kumar. **Studies on digenian fauna and ecological variation of certain vertebrate hosts of Vindhyan Plateau.** (Dr N P Tripathi), Department of Zoology, Awadhesh Pratap Singh University, Rewa.

8. Surendranath, Sapna T M. **A comparative histoenzymological study of some tissues with reference to reproductive cycle in two species of birds.** Department of Zoology, Maharaja Sayajirao University of Baroda, Vadodara.

9. Tamlurkar, Hanmandlu Laxman. **Studies on some aspects of physiology of a fresh water male crab barytelphusa guerini with special *reference to* inorganic pollutants.** (Dr N E Ambore), Department of Zoology, Swami Ramanand Teerth Marathwada University, Nanded.

10. *Tyor, Anil Kumar.* ***Hydrological and ecological*** **studies of lotic waters in Western Himalayas with special reference to fish communities.** (Dr M S Johal and Prof K K Tandon), Department of Zoology, Panjab University, Chandigarh.

EARTH SYSTEM SCIENCES

Environmental Science

1. Mishra, Atul Kumar. **Ecological evaluation of Lantana Camara with particular reference to its invasion in a tropical decidious forest of Rewa.** (Dr R M Mishra), Department of Environmental Biology, Awadhesh Pratap Singh University, Rewa.

2. Shivappa, D. **Studies on the effect of sugar mill effluent on the seed germination, growth, yield and biochemical change in paddy Oryza sativa L.** *(Dr E T Puttaiah)*, Department of Environmental Science, Kuvempu University, Shimoga.

3. Singh, Manav Neelam. **Investigation on some phylloplane micro-organism of forest of Rewa.** (Dr U K Chauhan), Department of Environmental Biology, Awadhesh Pratap Singh University, Rewa.

Geology

1. Gurmeet Kaur. **Petrology and geochemistry of the granitoids of Delhi Supergroup, Khetri Copper Belt, North Rajasthan, India.** (Prof P K Mehta and Dr Naveen Chaudhari), Department of Geology, Panjab University, Chandigarh.

2. Madhukar, G. **Prospecting, resource evaluation and economic viability of Palnad limestone despoit, Gottimukkala Area, Guntur District, Andhra Pradesh.** (Dr V Sudarshan), Department of Geology, Osmania University, Hyderabad.

Geophysics

① Singh, Sunil Kumar. **Seismic imaging and tectonics of Koyana seismic zone.** (Dr S S Rai), Department of Geophysics, Osmania University, Hyderabad.

ENGINEERING SCIENCES

Chemical Engineering

1. Swar, Akhila Kumar. **Assessment of concentration and physico-chemical characteristics of atmospheric suspended particulate matter at Rourkela, Orissa.** (Dr K K Jain and Dr T N Tiwari), Department of Chemical Engineering, Sambalpur University, Jyoti Vihar, Burla

Civil Engineering

1. Bhadauria, Sudhir Singh. **Durability and service life of concrete structures.** (Dr M C Gupta), Department of Civil Engineering, Jiwaji University, Gwalior.

2. Panduranga Rao, P. **A methodology for leakage reduction and water conservation in intermittant water supply systems: A case study.** (Prof B S N Raju), Department of Civil Engineering, Andhra University, Waltair.

3. Srinivas, T. **Studies on 2-D horizontal dispersion of high density pollutant through saturated porous media.** *(Prof M Srinivasa Rao and Prof M L Narasimham), Department* of Civil Engineering, Andhra University, Waltair.

4. Vakil, Anita Bhaskar. **Spatial information technology and ground water modeling for watershed management.** (Dr I V Muralikrishna), Department of Civil Engineering, Osmania University, Hyderabad.

Computer Science

1. Manaullah. **Performance evaluation of multiprocessor architectures.** (Prof M R Khan and Prof M Qusim Refiq), Department of Computer Engineering, Jamia Millia Islamia, New Delhi.

Electrical Engineering

1. Beg, Mirza Tariq. **QIS routing for computer networks: A fuzzy logic based approach.** (Prof Moinuddin), Department of Electrical Engineering, Jamia Millia Islamia, New Delhi.

2. Selvam, S. **Improved load balancing strategies for distributed computing systems.** (Prof Moinuddin and Prof Ibrahim), Department of Electrical Engineering, Jamia Millia Islamia, New Delhi.

Electronics Engineering

1. Kasa, Ravindra. **Modelling of path loss and characterisation of mobile communication channels.** (Dr A D Sarma), Department of Electronics Engineering, Osmania University, Hyderabad.

Instrumentation Engineering

1. Preethy Menon, C. **Photopyroelectric study of thermal properties and phase transitions in selected solids.** (Dr Jacob Philip), Department of Instrumentation, Cochin University of Science and Technology, Kochi.

Mechanical Engineering

1. Agrawal, Vijay Kumar. **Role of information technology in business transformation.** (Dr Abid Haleem and Prof Sushil), Department of Mechanical Engineering, Jamia Millia Islamia, New Delhi.

2. Chopde, Ichharam Kisan. **Mathematical stimulation modeling of working of an enterprise.** (Dr J P Modak and Dr R D Askhedkar), Department of Mechanical Engineering, Visvesvaraya National Institute of Technology, Nagpur.

MATHEMATICAL SCIENCES

Mathematics

1. Harish Singh. **On a problem of the chemist mendeleev and related problems on polynomials.** (Prof K K Dewan), Department of Mathematics, Jamia Millia Islamia, New Delhi.

2. Kaushik, Indu. **Zero-free regions of polynomials.** (Prof K K Dewan), Department of Mathematics, Jamia Millia Islamia, New Delhi.

3. Khan, Mohd Sadiq. **Contribution to the study of multiple gaussian hypergeometric functions.** (Dr Mohd Idris Qureshi and Prof M A Pathan), Department of Mathematics, Jamia Millia Islamia, New Delhi.

4. Mohammad Shahzad. **Chaotic motion in non linear dynamical system.** (Prof Z A Taqvi), Department of Mathematics, Jamia Millia Islamia, New Delhi.

5. Mohd Abdullah Mir. **On external properties and location of zeros of polynomials.** (Prof Kum Kum Dewan), Department of Mathematics, Jamia Millia Islamia, New Delhi.

6. Poddar, Awadhesh Kumar. **Existence of periodic orbits in the restricted problem when primaries are triaxial rigid bodies and source of radiation pressure.** (Prof Z A Taqvi and Dr K B Bhatnagar), Department of Mathematics, Jamia Millia Islamia, New Delhi.

7. Puranik, Anand Govind. **Picard exceptional values, fix points and related topics concerning differential polynomials.** (Dr S S Bhoosanurmath), Department of Mathematics, Gulbarga University, Gulbarga.

8. Sar, Satyabachi. **A critical review of present day studies of Mathematics undertaken in different university and colleges with reference to higher secondary stage.** (Prof M C Chaki), Department of Mathematics, Tripura University, Suryamaninagar, Tripura.

9. Sharma, Ravinder Kumar. **Existence and stability of libration points of the restricted three body problem when priaries are triaxial rigid bodies.** (Prof Z A Taqvi and Dr K B Bhatnagar), Department of Mathematics, Jamia Millia Islamia, New Delhi.

10. Wali, Augustus Nzomo. **Geometry of submersions and submanifolds in an almost hermitian manifold.** (Dr Mohd Hasan Shahid), Department of Mathematics, Jamia Millia Islamia, New Delhi.

Statistics

1. Sindhu, T K. **An extended pearson system useful in reliability analysis.** (Dr P G Sankaran), Department of Statistics, Cochin University of Science and Technology, Kochi.

MEDICAL SCIENCES

Immunology

1. Neela, S. **Immunological potential of B-Cell epitope based antigens derived from bonnet monkey (Macaca radiata) zona pellucida glycoproteins.** (Dr Satish Kumar Gupta), National Institute of Immunology, Jawaharlal Nehru University, New Delhi.

Pharmaceutical Science

1. Krishna Rao, Gopala. **Drug design synthesis of fluorinated heterocycles as potential biomimetic agents.** (Dr Bagavant G), Department of Pharmaceutical Science, Bangalore University, Bangalore.

2. Seth, Avinashkumar Madhusudan. **Topical targeting of antiviral drug.** Department of Pharmaceutical Science, Maharaja Sayajirao University of Baroda, Vadodara.

PHYSICAL SCIENCES

Biochemistry

1. Gupta, Anu. **Evaluation of combination of mycobacterial immunodominant protein antigens as a potential vaccine candidate against experimental tuberculosis.** Department of Biochemistry, Postgraduate Institute of Medical Education and Research, Chandigarh.

2. Neelagund, Shivayogeeswar Eswarappa. **Studies on the antiviral protein from faeces of silkworm Bombyx more.** (Dr S B Hinchigeri), Department of Biochemistry, Gulbarga University, Gulbarga.

3. Rai, Meena. **Dictyostelium discoideum as an expression system.** Department of Biochemistry, Maharaja Sayajirao University of Baroda, Vadodara.

4. Rajeshwari, G. **Study of lipid profile, apo(a) and Lp(a) in health and disease.** (Dr Govindaraju V), Department of Biochemistry, Bangalore University, Bangalore.

Chemistry

1. Abdul Hasnat. **Synthesis and formulation of new epoxy based anti corrosive paints from indigenous sources and commercially available polymeric paints and their characterisation.** (Dr Sharif Ahmed and Dr S M Ashraf), Department of Chemistry, Jamia Millia Islamia, New Delhi.

2. Abdul Karim Hussein A Mohamed. **New synthetic procedures: Using organosilicon compounds and their mechanistic aspects.** (Dr Nagendrappa G), Department of Chemistry, Bangalore University, Bangalore.

3. Abida. **Study of the intermolecular ion-solvent and surfactant-solvent interactions in binary and ternary liquid mixtures.** (Dr Anwar Ali), Department of Chemistry, Jamia Millia Islamia, New Delhi.

4. Anwar Ahmad. **Physico-chemical and toxicological studies of industrial effluents.** (Dr Masood Alam), Department of Chemistry, Jamia Millia Islamia, New Delhi.

5. Badheka, Yogiraj Mansukhlal. **Studies on solid acid catalysts for acylation and alkylation of aromatic compounds.** (Dr R V Jasra), Department of Chemistry, Bhavnagar University, Bhavnagar.

6. Bhadani, Pankaj Jivrajbhai. **Comparative and absorption difference spectroscopy involving 4f-4f**

transitions to investigate the complexation of Pr(III) and Nd(III) with amino polycarboxylic acids in different *experimental conditions.* (*Dr S N Misra*), Department of Chemistry, Bhavnagar University, Bhavnagar.

7. Bhadauria, Akhilesh. **Electrochemical studies on some organic compounds.** (Dr Rajiv Jain), Department of Chemistry, Jiwaji University, Gwalior.

8. Bhardwaj, Shivani. **Studies on treatment and utilisation of industrial waste.** (Prof Mukhtar A Khan), *Department of Chemistry, Jamia Millia Islamia, New Delhi.*

9. Bharti, Neelam. **Synthetic and naturally occuring biologically active compounds.** (Prof Fehmida Naqvi and Dr Amir Azam), Department of Chemistry, Jamia Millia Islamia, New Delhi

10. Chaubey, Girija Shankar. **Kinetics of oxidation of some organic compounds by quinolinium dichromate.** (Prof M K Mahanti), Department of Chemistry, North Eastern Hill University, Shillong

11. Dubey, Amit. **Synthesis, characterisation and catalytic applications of anionic clays.** (Dr S Kannan), Department of Chemistry, Bhavnagar University, Bhavnagar.

12. Hadimani, Chinnappa Chanamallappa. **Some studies on stability constants of metal complexes in solutions.** (Dr I S Kakhandki), Department of Chemistry, Gulbarga University, Gulbarga

13. Hussain, Hakeem Arshad **Syntheses and characterisation of trivalent lanthaxide complexes with heterocyclic amines and Schiff bases: Optical absorption and NMR spectroscopic studies.** (Dr K Iftikhar), Department of Chemistry, Jamia Millia Islamia, New Delhi

14. Khaja Zaheeruddin **Ultrasonic studies on some chemical systems.** (Prof K C Rajanna), Department of Chemistry, Osmania University, Hyderabad

15. Khan, Mozaffar Alam **Development and *characterisation of lignin based adhesives from agrowastes.*** (Prof S M Ashraf and Dr V P Malhotra), Department of Chemistry, Jamia Millia Islamia, New Delhi.

16. Mahadevan, K M **Studies on derivatives of napthofurans.** (Dr V P Vaidya), Department of Chemistry, Kuvempu University, Shimoga

17. Mohd Zakir **Equilibrium studies on metal complexes *containing Pyrones and series of* Bioligands.** (Dr M Devdas), Department of Chemistry, Osmania University, Hyderabad

18. Narender Kumar **Physico-chemical studies of solvent-solvent and ion-solvent interactions in binary and ternary mixtures.** (Dr Anwar Ali and Dr M Ibrahim), Department of Chemistry, Jamia Millia Islamia, New Delhi

19. Parvaiz, Mir Bilal **Synthesis, characterisation and physico-chemical studies of some macrocylic complexes with transition metal ions.** (Dr Tabrez Alam Khan), Department of Chemistry, Jamia Millia Islamia, New Delhi.

20. Patel, Ashwinkumar Shankarlal **Studies of binary ternary and polynuclear schiff base chelates of bivalent transition metal ions involving heterocyclic B8-Diketones and their hydrazone ligands.** (Dr B T Thakur), Department of Chemistry, South Gujarat University, Surat

21. Patel, Sonal Manish **Studies on some tetravalent metal acid salts and their applications.** Department of Chemistry, Maharaja Sayajirao University of Baroda, Vadodara.

22. Patil, Sudhakar Gunwantrao. ***Kinetics and mechanism* of oxidation of phenols by pyridinium fluorochromate.** (Dr S B Joshi), Department of Chemistry, Swami Ramanand Teerth Marathwada University, Nanded.

23. Shailendra. **Synthesis, characterisation of some heterocyclic compounds and their antiprotozoal activity.** (Prof Fahmida Naqvi and Dr Amir Azam), Department of Chemistry, Jamia Millia Islamia, New Delhi

24. Sharma, Kamlesh. **Synthesis of heterocyclic organic compounds with special reference to steroids.** (Dr Kishwar Salim), Department of Chemistry, Jamia Millia Islamia, New Delhi.

25. Sharma, Sangita. **Synthesis and characterisation of heterocylic compounds and their biological activity.** (Prof Fahmida Naqvi and Dr Amir Azam), Department of Chemistry, Jamia Millia Islamia, New Delhi.

26. Sreedhara Ranganath Pai, K. **Studies on substituted 3-formyl, 2 hydroxy quinolines and their metal complexes.** (Dr P Vasudev Nayak), Department of Chemistry, Kuvempu University, Shimoga.

27. Sreekanth, A R. **Novel strategies for heterocyclic *constructions via 1, 4-Dipolar intermediates.*** (Dr G Vijay Nair), Department of Chemistry, Cochin University of Science and Technology, Kochi.

28. Suresh, Pramila. **Physico-chemical studies of some coordination compounds.** (Dr B R Havinale), Department of Chemistry, Gulbarga University, Gulbarga.

29. Tiwari, Jagdish Chandra. **Application of IR *spectroscopy in food sciences: Studies on sugar house* products and fruit juices.** (Prof M A Khan and Dr Ranjana Mehrotra), Department of Chemistry, Jamia Millia Islamia, New Delhi.

Physics

1. Brajraj Singh. **A study of high to copper oxide super conductors.** (Dr Y M Gupta and Dr D C Gupta), Department of *Physics, Jiwaji University, Gwalior.*

2. Chingangbam, Pravabati. **Connection and curvature in the fibre bundle formulation of quantum theory.** (Prof P Sharan), Department of Physics, Jamia Millia Islamia, New Delhi.

3. Gangakhedkar, Kishorkumar Rameshrao **Effects of various physical factors on seed mycofloron of some oil seeds in Marathwada.** (Dr A L Chaudhary and Dr S N Sandikar), Department of Physics, Swami Ramanand Teerth Marathwada University, Nanded.

4. Haldhar, Amritlal. **Geo-electrical and remote sensing data based analysis of Hydrogeological regime of Govind Sagar Dam environs of Lalitpur District, Uttar Pradesh.** (Dr Pramendra Dev), Department of Physics, Vikram University, Ujjain.

5. Khan, Mohd Abdul Majeed. **Estimation of density of localised states in chalcogenide glasses from electrical properties.** (Dr M Hussain and Dr M Zulfequar), Department of Physics, Jamia Millia Islamia, New Delhi

6. Khan, Mohd Naziruddin. **Spectroscopic characterisation of polycyclic aromatic hydrocarbons and their radical ions trapped in glasses.** (Prof Z H Zaidi), Department of Physics, Jamia Millia Islamia, New Delhi.

7. Khan, Mohd Shahid. **Experimental and theoretical investigation of electronic spectra of hydroxy and amino derivatives of anthraquinone.** (Dr Zahid H Khan), Department *of Physics, Jamia Millia Islamia, New Delhi.*

8. Khan, Shamshad Ahmad. **Crystallisation kinetics and phase change studies in amorphous semiconducting alloys.** (Dr M Hussain and Dr M Zulfequar), Department of Physics, Jamia Millia Islamia, New Delhi.

9. Ojha, Babita. **Some theoretical study of electron phonon interaction in heavy fermion systems.** (Dr P Nayak), Department of Physics, Sambalpur University, Jyoti Vihar, Burla.

10. Shrivastava, Uma. **Some investigation in X-Ray satellite spectra.** (Dr B D Shrivastava), Department of Physics, Vikram University, Ujjain.

11. Singh, L Seventh Star. **ECR etching of III-V group compound materials.** (Prof Z H Zaidi), Department of Physics, Jamia Millia Islamia, New Delhi.

12. Srivastava, Sharad. **High energy plasmon satellites in the X-Ray excited auger spectra of solids.** (Dr M Hussain and Dr K S Srivastava), Department of Physics, Jamia Millia Islamia, New Delhi.

13. *Sukhvir Singh.* ***Preparation and characterisation of* thin films of compound semiconductors.** (Prof Z H Zaidi and S K Sharma), Department of Physics, Jamia Millia Islamia, New Delhi. ☐

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Professor of Computing Science and Information Systems

Mathematics and Computing Science Department

School of Pure and Applied Sciences

Ref. FMA039

The appointee will be responsible for teaching undergraduate and postgraduate courses both on-campus and through the distance mode; contribute to the Department's research and publications profile; and contribute to administrative tasks in the Department and School

The Department of Mathematics and Computing Science has both Computing Science programmes and Information Systems programmes. The Professor will be expected to look after and provide leadership in the development of both programmes within the Department, to have knowledge of both areas, and to have expertise within one of these areas.

Applicants must have a PhD with extensive tertiary teaching experience, good research and publication record; and a record of academic administration and leadership. In exceptional cases, equivalent experience or qualifications may be substituted for these requirements.

Preference will be given to applicants with experience in distance education and teaching in a developing country.

The position is available for a term of three years and may be renewed by mutual agreement

Salary Range: Professor F$80 520 to F$87 049 per annum (Inclusive of 15% Gratuity)

An inducement allowance of up to 50% may be paid to attract an exceptionally qualified candidate.

Closing date for applications 31 October 2003.

Enquiries: Head of Department, Mathematics and Computing Science, tel: (679) 3212364; fax: (679) 3303455
email. HoDMaCS@usp.ac.fj

Chief Technician

Physics Department

School of Pure and Applied Sciences

Ref. FPH015

Applications are invited for the post of Chief Technician in Physics, University of the South Pacific. Applicants are expected to have good technical qualifications such as City and Guilds Full Science Laboratory Certificate or Higher National Certificate or equivalent, and substantive experience working in technical environment, preferably in physics laboratory in a tertiary institution. The appointee is also expected to have good managerial experience and organisational skills to provide leadership in the technical area.

The position is available, immediately, for a term of three years and may be renewed by mutual agreement

Salary Range F$41 348 to F$54 404 per annum (Inclusive of 15% Gratuity)

Closing date for applications 31 October 2003.

Enquiries: Dr Mahendra Kumar, tel. (679) 3301648
fax: (679) 3308972, email: kumar_m@usp.ac.fj
website: http://www.usp.ac.fj/physics

Assistant Lecturer/Lecturer in Education (English Language/Literacy)

Department of Education and Psychology

School of Humanities

Ref. FED065

The appointee will contribute to English language & literacy education courses within the Department's Certificate in TESL and primary/secondary teacher education programmes. He/she will also work with a team developing new programmes in this area, starting with a review of undergraduate courses and followed by the development of postgraduate courses. The appointee is also expected to assist in developing the existing primary BEd courses in language and literacy for delivery in distance and flexible modes.

The position is available for a term of three years and may be renewed by mutual agreement

Salary Range: Lecturer F$41 348 to F$54 404 per annum
Assistant Lecturer F$32 643 to F$39 172 per annum
(Inclusive of 15% Gratuity)

Closing date for applications 31 October 2003

Enquiries:
Dr Kalarina Tuinamuana
tel (679) 3212348
fax (679) 3308971
email tuinamuana_k@usp.ac.fj
website http://www.usp.ac.fj/Edpsyc

Lecturer/Senior Lecturer in Industrial Relations

Departments of Sociology/Management and Public Administration

School of Social and Economic Development

Ref FSO004

The Departments of Sociology and Management & Public Administration at USP invite applications from highly skilled individuals for the position of Lecturer/Senior Lecturer in Industrial Relations

Applicants should possess a PhD in Sociology or the allied discipline and an excellent publication, teaching and research record in the areas of comparative industrial relations, human resource management and industrial relations theory

Salary Range. Senior Lecturer F$56 562 to F$65 287 per annum
Lecturer F$41 348 to F$54 404 per annum
(Inclusive of 15% Gratuity)

Applications will not be acknowledged unless specifically requested

Closing date for applications 24 October 2003

Enquiries:
Dr Helen Leslie
Acting Head of Department, Sociology
tel (679) 3212538
fax: (679) 3301487
email. leslie_h@usp.ac.fj
website: http://www.usp.ac.fj/socio/

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Candidates may send their applications by email: personnel@usp.ac.fj or fax: (679) 3303437 while sending originals by mail

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Assistant Lecturer/Lecturer/Senior Lecturer in Accounting and Financial Management (6 months)

Department of Accounting and Financial Management- School of Social and Economic Development

Ref. FAC043

The appointee will teach degree level courses across the accounting curriculum, in any of the following areas of accounting: banking, finance, public sector accounting or information systems. The appointee will also be expected to contribute to teaching through the distance education mode at other University Centres and if appointed at the Lecturer level will also be expected to contribute to the Department's postgraduate programme. For appointment at the Senior Lecturer level, the appointee will be required to teach in the department's undergraduate and graduate programmes and offer thesis supervision at least to Masters level in the field of accounting; and undertake research work in his/her specialist area and provide support and guidance to junior colleagues. The level of appointment will depend on qualifications and experience

Initial screening will be conducted on 30 November, 2003 and continue until positions are filled.

This position is available for a period of three years

Salary Range:
Senior Lecturer F$56 582 to F$65 287 per annum
Lecturer F$41 348 to F$54 404 per annum
Assistant Lecturer F$32 643 to F$39 172 per annum
(Inclusive of 15% Gratuity)

There are inducement allowances of up to 50% for Senior Lecturer for appointment 12 months and above and 40% for appointment less than 12 months, 20% for Lecturer, and 10% for Assistant Lecturer, that may be paid to attract exceptionally qualified candidates.

Closing date for applications 7 November 2003.

Enquiries: Dr Arvind Patel, Head of Department
tel (679) 3212499; fax (689) 3301487; email: patel_a@usp.ac.fj; website http://www.usp.ac.fj/afm/

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Your application (addressing the criteria) and quoting the source from where you learned of this vacancy, must include full curriculum vitae plus certified copies of academic qualifications and transcripts. Please forward your application to The Recruitment Manager, The University of the South Pacific, Suva, Fiji. Applicants must request three professional referees to forward signed reports (quoting reference number) to the above address by the closing date

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Applications are invited for the following Teaching / Non-teaching posts :

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(1) MASTER OF COMPUTER APPLICATION (MCA) : PROFESSOR - 1, LECTURER - 1 (ST / SEBC) qualification and Pay Scale as per the U.G.C. norms.

(2) M. Sc. (INFORMATION TECHNOLOGY) : DIRECTOR - 1 (Contractual appointment) qualifications and Pay Scale comparable to AICTE norms.

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(1) DEAN, COLLEGE DEVELOPMENT COUNCIL (Three years' Tenure Post) : One, Pay Scale :- Rs. 16,400-450-20,900-500-22,400.

(2) UNIVERSITY LIBRARIAN : One, Pay Scale : Rs. 10,000-325-15,200.

(3) PLACEMENT OFFICER (DEPARTMENT OF BUSINESS AND INDUSTRIAL MANAGEMENT) :- One, Pay Scale :- Rs. 10,000-325-15,200.

Details regarding qualifications and other conditions will be available along with the application from, from the Account Section on payment of Rs. 250/- in cash or by D.D. (Payable to the Registrar South Gujarat University, Surat) with self addressed envelope of 22cm x 13 cm size with postal stamps worth Rs. 20/- affixed thereon.

Candidates for the post of lecturer must attach certificates of achievements viz. NCC/NSS/SPORTS/CULTURAL ACTIVITIES etc. In addition, candidates belonging to the reserved categories certificates of caste from the competent authorities of the Gujarat State be also attached.

Candidates applying for the post of Professor should send four (4) sets of reprints of three major / best publications, of which, one could be a book or research report along with their applications. Applications without these enclosures will be summarily rejected. For teaching post knowledge of Gujarati is desirable whereas for Non-Teaching post knowledge of Gujarati is essential.

The candidates who have applied for the above post in response to the earlier advertisement need not apply again.

The completed application form must reach to the undersigned **on or before 15/11/2003.**

sd/-
Dr. K. M. Pandya
I/C Registrar

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INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

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Spring Semester (Session 2003-04)

Applications are invited for admission to full-time/part- time Ph. D. programmes in the following departments:

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An applicant possessing the following qualifications in appropriate areas shall be eligible to **apply** for admission to Ph.D. programme of the Institute:

Masters degree in Engineering / Technology/ Sciences/ Humanities & Social Sciences and Management in respective discipline or equivalent, with a minimum Cumulative Grade Point Average (CGPA) of 6.75 on a 10 point scale or equivalent as determined by the Institute wherever letter grades are awarded; or 60% marks in aggregate (of all the years/ semesters) where marks are awarded (for Science discipline, candidate must have qualified GATE/NET etc.) **OR Applicants with B.Tech. degree or equivalent in respective discipline with excellent academic record (with a minimum CGPA of 7.5 on a 10 point scale or equivalent or 70% marks) may be considered eligible for admission.**

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Last date for receipt of completed application FORM is OCTOBER 31, 2003.

Asstt. Registrar (PGS&R)

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No TA/DA will be provided.

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The candidate must be a doctorate degree holder in any branch of Science/Technology with at least 55% of marks or its seven equivalent grade B in the UGC seven point scale having administrative experience in an academic/research institute for a minimum period of five years.

AGE: The candidate must not be below 50 years of age.

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Chemistry-1 (Physical/Organic/Inorganic Chemistry), Chemical Engineering and Technology-1 (Chemical Engineering); Fine Arts (History of Art)-1; National Centre for Human Genome Studies and Research-1.

III. **LECTURES** ***in the following Departments/Centres:***
Chemical Engineering and Technology-2 (Chemical Engineering-1; Food Technology-1), University Institute of Engineering and Technology-1 (Mathematics/Applied Mathematics), University Institute of Pharmaceutical Sciences-1 (Pharmaceutics), Centre for Environment and Vocational Studies-2, Statistics-1; P.U. Regional Centre, Muktsar (English)-1; Fine Arts (History of Art)-1, University Business School-2, Music-1 [(Vocal Hindustani Classical Music) (purely on temporary basis against leave vacancy)], Laws-2 (purely on temporary basis upto 31.3.2004), Gandhian Studies-2 (purely on temporary basis upto 31.3.2004)

1. *3% posts of Lecturers will be reserved for persons with disabilities i.e. Locomotor disability and blindness as per Disability Act (1995).*
2. *The candidates for the posts of Readers in (a) History of Art (Fine Arts) and (b) Human Genome Studies and Research who have already applied in response to Advt. No. 5/2003 need not apply again. Their old applications will be considered*
3. *If no candidate is found suitable/eligible for the post of Reader in Human Genome Studies and Research, temporary appointment of a Lecturer in Human Genome Studies and Research against the said post of Reader will be made for the Current Academic Session 2003-2004*
4. *The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration alongwith the applications received in response to the advertisement*
5. *If any information supplied by the candidate in his application form is found to be incorrect/false at any stage, his candidature/selection will be cancelled*
6. *Conditions given in the Detailed Instructions supplied with the application form shall also be applicable.*

Cost of application form, including fee is Rs. 375/- for General category and Rs. 150/- for SC/ST candidates

Application form along with 'Detailed instructions' can be had either personally from S.B.I. Cash Counter, Panjab University, Chandigarh, or by post from Deputy Registrar (Establishment) by sending a self-addressed stamped (worth Rs. 15/-) envelope of 30 cm × 12 cm along with requisite fee through Bank Draft favouring Registrar, Panjab University, Chandigarh payable at Chandigarh. The candidates living abroad may apply on plain paper will full bio-data (ten copies), one set of attested copies of testimonials, together with requisite fee through a crossed account payee Bank Draft payable at Chandigarh in favour of the Registrar, Panjab University, Chandigarh. Please also attach four sets of reprints of three major publications of which one could be a book or research report for the post of PROFESSOR and if applied for the post of Reader attach four sets of reprints of three major publications. Please see the Detailed Instructions. Application form and Detailed Instructions are also available on **Website: forms.puchd.ac.in**

CLASSIFIED ADVERTISEMENT

SHREE WARANA VIBHAG SHIKSHAN MANDAL'S

Yashwantrao Chavan Warana Mahavidyalaya, Warananagar
Pin : 416 113, Dist. Kolhapur
(Maharashtra)

(Affiliated to Shivaji University, Kolhapur)

WANTED

Applications are invited from eligible candidates for the following posts

Sr. No.	Designation	Total Posts	Open Posts	Reserved Posts
1	Principal	1	1	-

Notes :

1. Ph.D. or equivalent qualification and a minimum experience of 10 years (for Principal of Reader's Grade) or 15 years (for principal of Professor's grade) of Teaching / Research in Universities / Colleges and other Institutions of Higher Education is essential.
2. Educational qualification, Pay Scales and Service Condition will be as per the rules of Shivaji University, Kolhapur.
3. Those who are already in service should apply through proper channel.
4. Incomplete application will not be entertained.
5. Apply to the Secretary, giving full particulars **within a month** from the date of publication of this advertisement to the undersigned.

Place : Warananagar
Date : 4-10-2003

Hon. G.D. Patil
Secretary

Hon. Vinay Kore
(M.L.A.)
Ag. President

CORRIGENDUM

Refer the Adv. No. 43/2003 dated 25.9.2003 of **Hemchandracharya North Gujarat University, Patan** published in University News issue dated September 29 - October 05, 2003 at page 40 in classified columns.

Amend to read the last date of receipt of completed application forms as **15th October, 2003** in place of 6th October, 2003.

All other contents of the advertisement remain the same.

POSTGRADUATE INSTITUTE OF MEDICAL EDUCATION AND RESEARCH, CHANDIGARH

ADMISSION NOTICE NO. 66/2203

LAST DATE FOR RECEIPT OF APPLICATION: 4-11-2003 UPTO 4.00 P.M.

Applications on the prescribed form are invited for the following Postdoctoral/ Postgraduate courses and Ph.D. Programme for the academic session starting from 1st January, 2004. INCOMPLETE APPLICATIONS WILL NOT BE ENTERTAINED AND NO CORRESPONDENCE WILL BE MADE IN THIS REGARD.

1. **FIRST YEAR JUNIOR RESIDENT (FOR MD/MS COURSES)**
   Anaesthesia (Gen-6, SC-1, Spon-1, FN- 1), Biochemistry (Gen-1, ST-1, Spon-1), Community Medicine (Gen-2, SC-1, Spon-1),Dermatology, Venereology & Leprology (Gen-2, RA-1, Spon-1, FN-1), ENT (Gen-1, Spon-1, FN-1), Medicine (Gen-10, SC-2, ST-1, RA-1,Spon-2, FN-2), Obst. & Gynae. (Gen-6, SC-1, ST-1, Spon-2, FN-1), Pediatrics (Gen-11, SC-2, ST-2, RA-1, Spon-2, FN-2), Psychiatry (Gen-2, SC-1, Spon-1, FN-1), Ophthalmology (Gen-1, Spon-1, FN-1), Orthopedic Surgery (Gen-3, SC-1, Spon-1), Radiodiagnosis (Gen-2, SC-1, Spon-1, FN-1), Radiotherapy (Gen-1, Spon-1), Gen. Surgery (Gen-7, SC-2, ST-1, RA-1, Spon-2, FN-2), Transfusion Medicine (Gen-1, Spon-1), Microbiology (Gen-1, Spon-1, FN-1), Pathology (Gen-2, Spon-2, FN-1), Pharmacology (Gen-1, SC-1, Spon-1).
2. **FIRST YEAR JUNIOR RESIDENTS (HOUSE JOB) FOR ORAL HEALTH SCIENCES (Gen-8, SC-1, ST-1)**
3. **DM/M.Ch.**
   Cardiology (Gen-1, Spon-1), Clinical Pharmacology (Gen-1, Spon-1), Endocrinology (Gen-2, Spon-1) Gastroenterology (Gen-2, Spon-2), Nephrology (Gen-2, Spon-1), Neurology (Gen-1, Spon-1), Neonatology (Gen-1), Pul & Critical Care Medicine (Gen-1, Spon-1), Cardiovascular & Thoracic Surgery (Gen-2, Spon-1), Neurosurgery (Gen-2), Pediatric Surgery (Gen-3) Plastic Surgery (Gen-2) Urology (Gen-2, Spon-1)
4. **Ph.D. Programme**
   Anaesthesia, Anatomy, Biophysics, Biochemistry, Community Medicine, Gastroenterology, General Surgery, Histopathology Hepatology, Med. Microbiology, Neurology, Pharmacology, Parasitology, Paediatrics, Psychiatry/ Clinical Psychology , Exp. Medicine & Biotech., Transfusion Medicine, Obstetrics & Gynaecology.
5. **M.Sc. Medical Technology (Pathology) with Immunopathology-2, Cytology-1, Histopathology-1 as special subject.**
6. **M.Sc. Medical Technology (Microbiology) with Bacteriology & Mycology-2, Parasitology-2, Virology-2 as special subject.**
7. **M.Sc. Medical Technology (Pharmacology & Physiology)-1.**
8. **M.Sc. Medical Technology (Radiology) with Radiotherapy-1, Radio-diagnosis-1 as special subject.**
9. **Post MD Certificate Course in Medical Biotechnology-5.**
10. **Post MD Certificate Course in Cytopathology (Gen-2, Spon-1)**

GENERAL INFORMATION

1) For all courses, where MBBS/BDS is an eligible requirement, the candidates who have made more than one attempt (i.e have more than one failure, compartment or reappear) during their MBBS/BDS course, are not eligible. For *DM/M Ch courses, the candidates who have made more than one attempt in MBBS/MD/MS career are not eligible.* However, those belonging to Sch. Caste/Tribes with upto two attempts in their MBBS/BDS career will be eligible for MD/MS and House Job in Oral Health Sciences.
2) The number of seats wherever indicated are provisional and are subject to change without any prior notice.
3) *The courses at Categories 5 to 8 above are only for Sponsored/ Deputed candidates.*
4) A candidate applying for more than one subject/course except category-1, 2 & 3 is required to submit separate application complete in all respect for each subject/course
5) The Candidates may apply in the form downloadable at http://pgimer.nic.in together with requisite fee by Demand Draft in the name of **Director, PGI**. The prescribed application forms along with prospectus (Brochure of information) are also available from the office of the undersigned either personally on payment of Rs. 500/- for general category and Rs. 400/- for SC/ST at the counter (Kairon Block, Room No. 306) from 10:30 AM to 12:30 PM and from 2:30 PM to 3:30 PM on all working days except Saturdays (On Saturdays, forms will available from 10:30 AM to 12:00 Noon) or by post for which the request must be accompanied with a self addressed thick envelope of size 24 x 15 cm bearing postage stamps of Rs. 25/- and Bank Draft preferably from any SBI branch payable at SBI Medical institute Branch (Code No 1524), Chandigarh/ Postal Orders for General Rs. 500/- and for SC/ST Rs. 400/- (indicating category i.e. General of SC/ST) drawn in favour of the **Director, PGI, Chandigarh.** However, prospectus for DM/M.Ch. will be available for Rs. 500/- only as there is no reservation for the same.

TENTATIVE DATE OF EXAMINATIONS

HOUSE JOB (ORAL HEALTH SCIENCES)	MD/MS	DM/M.Ch.
2.12.2003	13.12.2003	18.12.2003

Note : 1) It is in the interest of the candidate to send the application through Registered/ Speed Post.
2) No request for the supply of form by post will be entertained after 29.10.2003.
3) Fee once paid will not be refunded.

Web : http://pgimer.nic.in
E-mail: medinst@ pgi.chd.nic.in

D.R. YADAVA
Registrar

Posted at NDPSO on Tuesday/Wednesday every week

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KHAJA EDUCATION SOCIETY'S

KHAJA BANDANAWAZ INSTITUTE OF MEDICAL SCIENCES, GULBARGA

A MUSLIM MINORITY INSTITUTION

Permitted by the Ministry of Health and Family Welfare, New Delhi
***vide* Letter No. U.12012/49/99-ME (P) Dated 17-02-2000 and approved by the Medical Council of India, New Delhi**

ADMISSION TO
M.B.B.S. 1st year 2003-2004

Eligibility:

1. Pass in P.U.C./Intermediate / I.S.C. or other equivalent Examination or 10+2 Pattern recognized by Rajiv Gandhi University of Health Sciences, Bangalore (Karnataka State).
2. Minimum of 50% marks of the aggregate in Physics, Chemistry and Biology.
3. English should be one of the languages of study.
4. Should pass the All India Entrance Test conducted by the Khaja Education Society.

Admission shall be made on merit, based on an All India Entrance Test. The test has been fixed on **Sunday, 19th October 2003**, in the Medical College campus, Gulbarga. **The finalization of the admission of Candidates shall be made only after the renewal permission is obtained from the Ministry of Health & Family Welfare, New Delhi and the Medical Council of India.**

THERE SHALL BE A UNIFORM FEE FOR ALL THE CANDIDATES ADMITTED

Application Forms on payment of **Rs. 1,000.00** (inclusive of all relevant information) can be obtained from the office of the Admission Cell, Khaja Education Society, Gulbarga.

***Hon. Secretary*, KHAJA EDUCATION SOCIETY**
New Hostel Building, Rauza Buzurg,
GULBARGA -585104, Karnataka State
Tel.: (08472) 424591 / 436041 / 457513 Fax : 431882

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